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A RANGELAND DATABASE

Version 1.0
User's Guide

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Dedication: As I prepare to retire from public service, I dedicate **Oregon's Automated Ecological Site Information System** to the memory of ***Dr. E. J. Dyksterhuis***. His concepts of "Quantitative Ecology", as applied through the "range site" approach for classifying rangelands, form the foundation for OAESIS. **He got it right!** *Larry L. Walker*

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Contents

Overview 1

Organization 2

Uses 6

Access 7

Maintenance 8
User Tasks 9
State OAESIS Data Steward Tasks 11

References 15

Appendices
. 18
SITECOND 18
STRUCTUR 20
COMPOSIT 24
RSITESUM 26
ORTNCLST 30
NLSPNSCI 31
CULTURPR 33
NLSPNCOM 34
PRIWHILK 35
PRIWHI 36
SITEEDIT 38
COMPEDIT 40
GEOSPATIAL METADATA 42
CRBSUM/VDDT - OAESIS Crosswalk Table 49

Overview

The OAESIS Rangeland Database consists of a map in the *ARC/INFO* Geographic Information System (GIS), and a series of tables in the *Informix* Database Management System.

The data in OAESIS is from BLM Ecological Site Inventories (ESI) (BLM 1980; BLM 1984; BLM 1991; BLM 1992; Eshelman 1989) supplemented by information from other sources that can be related to the ESI data. This includes such things as wildlife habitat classification, cultural analysis priorities, models of ecological processes, and so forth.

OAESIS is compiled from other databases used at the local level. It maintains a summary of selected information compiled at the stand level for the dominant range site and condition class of

each stand. Therefore, OAESIS does not include all data that may have been collected to serve the needs of an individual inventory, nor data associated with an individual point or transect.

The initial coverage of OAESIS is about eleven and one-half million acres of BLM land and intermingled land of other ownerships in eastern Oregon and Washington. The BLM lands in Oregon that are not initially included in OAESIS are those in the Lakeview District (Ecological Site Inventory (ESI) in progress), and those in that part of the Vale District that is north of the Malheur River (no ESI yet). Lands that have been acquired subsequent to completion of ESIs in the individual inventory project areas are also not covered.

There is additional initial coverage in the tables, but not the map, for five Idaho sub-basins that

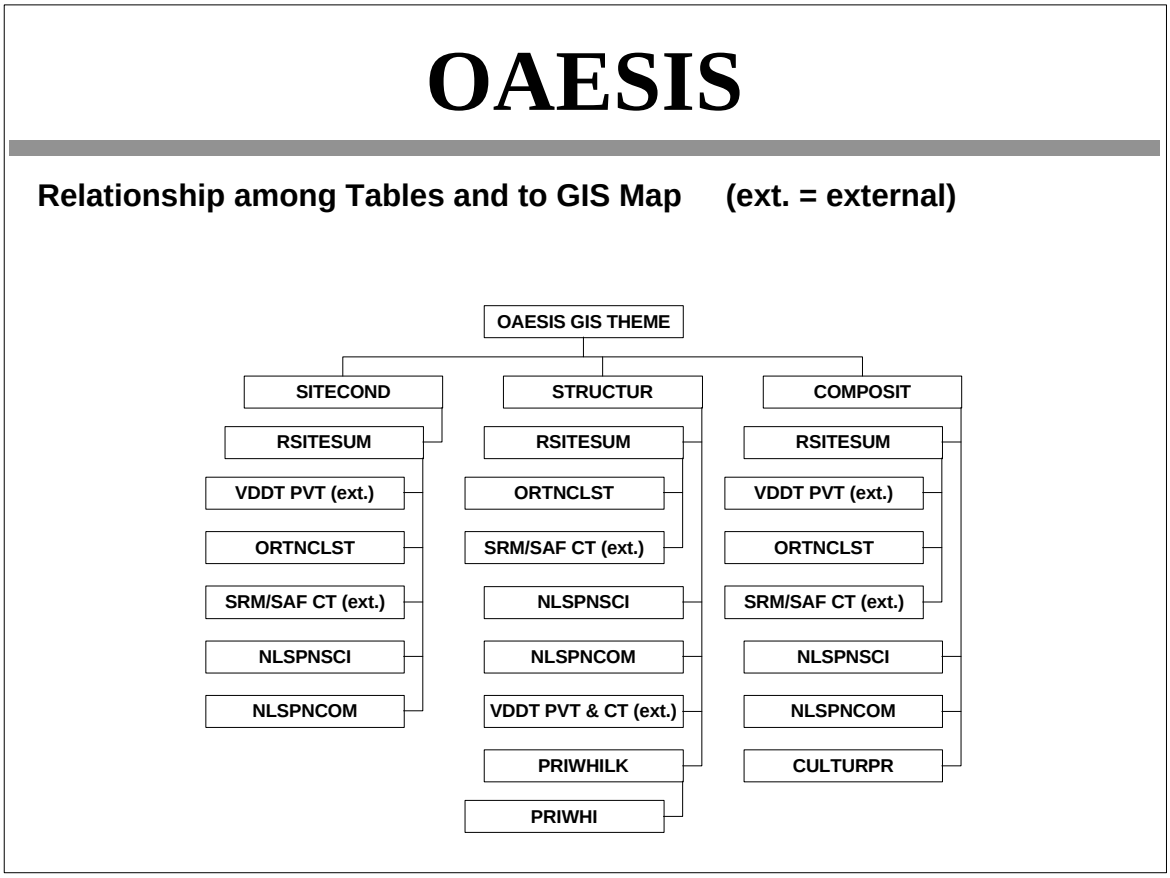

Figure 1

were included in the "mid-scale subsample" of the Interior Columbia Basin Ecosystem Management Project (ICBEMP).

Organization

All information in OAESIS is relational through one or more linking fields, so numerous ad-hoc pathways are available. Relative to the map (OAESIS GIS THEME), OAESIS can be viewed as a hierarchy with three basic pathways as shown in Figure 1. Specific links within each pathway are shown in Figures 2 through 4. Detailed documentation of the *Informix* tables and geospatial metadata for the GIS theme are provided in the appendix.

OAESIS GIS THEME: This is the map and consists of individual stands of vegetation that were mapped during ESIs. All stands are uniquely identified with a five character field called **stand**. In a few cases where disjunct stands were mapped, more than one polygon may carry the same **stand** identifier.

The three tables that follow are the "entrance tables" for each of the three pathways to and from the map.

SITECOND: This table provides the entrance for the first of the three pathways to and from the map. The relationship is "one to one" as there is one record per **stand**. The table provides information on the condition of the stand or if it is a miscellaneous land type (rock, riverwash,

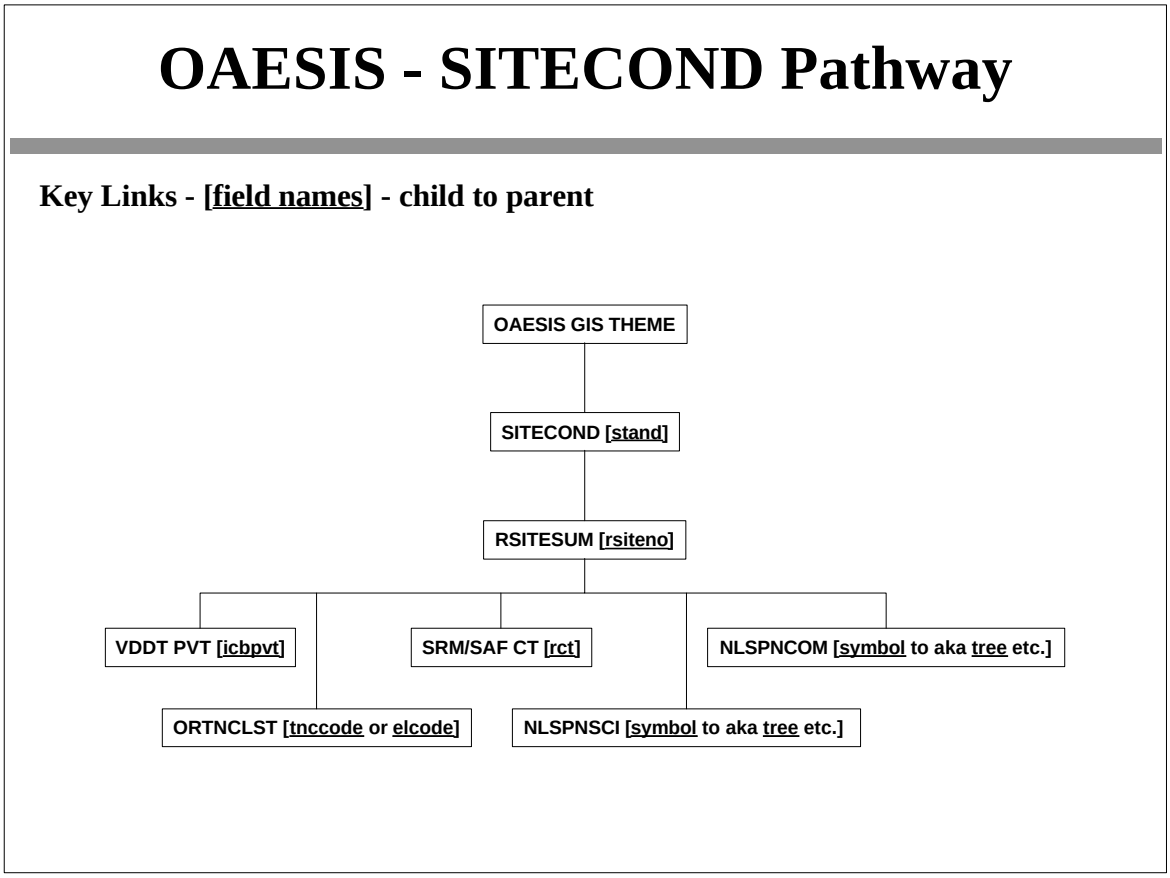

Figure 2

playa, etc.), and a link to the range site description (NRCS 1976) as shown in Figure 2. Due to the inclusion of miscellaneous land types and classified but not described stands, this table has the greatest coverage with about eleven and one-half million acres in the initial database.

STRUCTUR: This table provides the entrance for the second of the three pathways to and from the map. The relationship is "one to one" as there is one record per **stand**. The table provides information on the structure of the stand in terms of percent composition and dominant species within the class for each of 24 classes. The classes are based on source (native or introduced), life cycle (annual or perennial), and form (small forb, large forb, small grass, large grass, low shrub, mid shrub, tall shrub, or tree). In addition, it provides links to the range site description, wildlife

habitat interrelationships (Dealy and others 1981; Elmore and Walker 1982, Maser and others 1984), and both the potential vegetation type and present plant community type in the Columbia River Basin Succession Model (CRBSUM) (Keane and others 1996) and the Vegetation Dynamics Development Tool (VDDT) (Beukema and Kurz 1996) as shown in Figure 3. Initial coverage is about ten and one-half million acres.

COMPOSIT: This table provides the entrance for the third of the three pathways to and from the map. The relationship is "many to one" as there are many records for each **stand** (one for each species present). The table provides the percent of the total composition by species, the type of sample used, the structural classification of each species, and a link to the range site description as shown in Figure 4. The STRUCTUR table is compiled from this table, so the initial coverage is

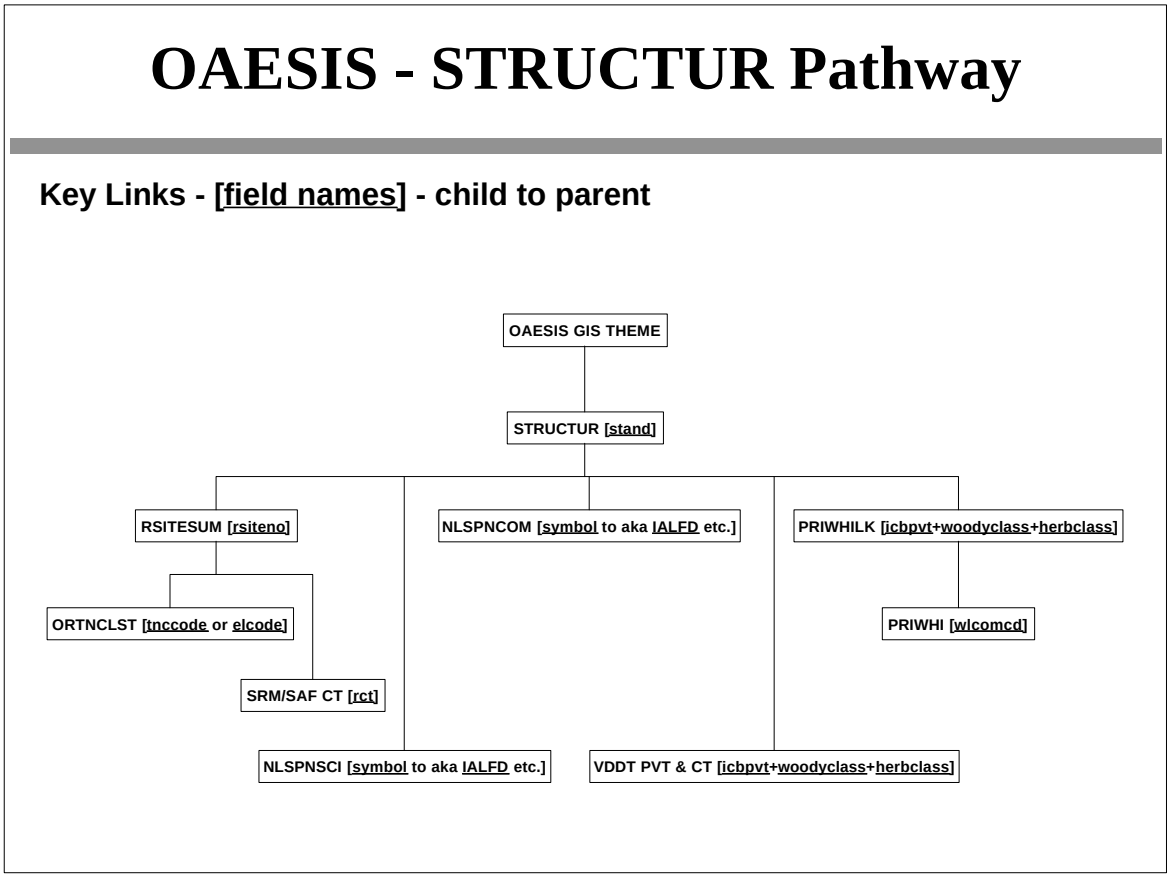

Figure 3

the same ten and one-half million acres.

The tables, external information, and external systems that follow can be linked to the map only through one or more of the entrance tables (eg. SITECOND, STRUCTUR, or COMPOSIT).

RSITESUM: This table links directly to all three entrance tables. The relationship is "one to many". While there is one record per **rsiteno**, each RSITESUM record may link to many records in each of the entrance tables. This table is derived from a review of Range Site Descriptions maintained by the Natural Resource Conservation Service (NRCS) under the number, year, and

name listed in the **rsiteno**, **year**, and **esname** fields. The table includes a variety of information on the landscape, soil and climatic characteristics of the site. In addition, it provides several critical links for use both within OAESIS and with external sources. These include Society for Range Management and Society of American Foresters cover types (Shiflet 1994; Eyre 1980); ICBEMP potential vegetation types; Natural Heritage Program classifications (Kagan 1994; Kagan and others 1996; Bourgeron and Engelking 1994); and habitat type, plant association, and series classifications used by various entities.

VDDT/CRBSUM: The Vegetation Dynamics Development Tool and Columbia River Basin Succession Model are external systems. OAESIS information from all three pathways can belinked to VDDT/CRBSUM at the **potential vegetation type** level of VDDT/CRBSUM via the **icbpvt** field in the RSITESUM table. In addition, OAESIS can be linked to VDDT/CRBSUM at both the **potential vegetation type** and the **community type/class** levels via the fields **icbpvt + woodyclass + herbclass** in the STRUCTUR table. Relationships vary from "one to many" to "many to many" depending upon how the linkage is performed. Although linkage at the **potential vegetation type** level is clean, linkage at the finer **community type/class** level is only

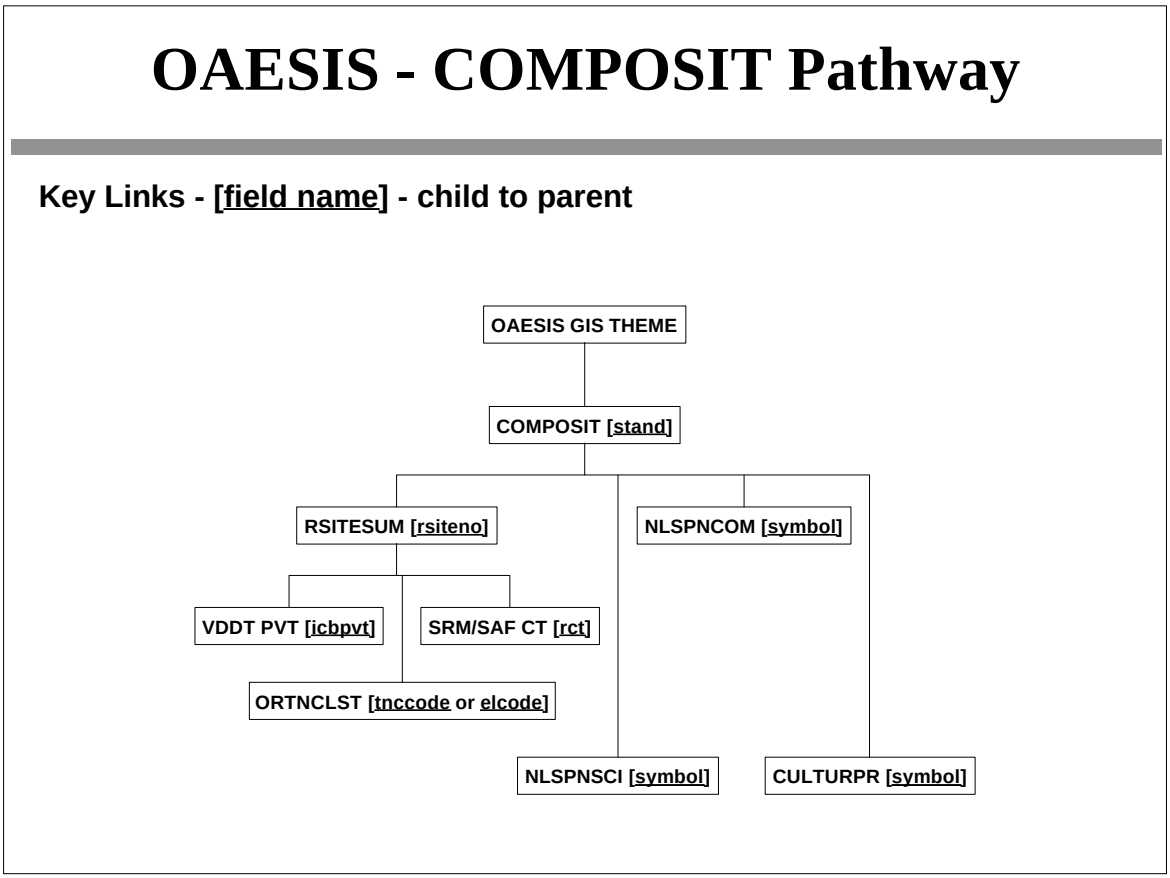

Figure 4

approximate (see appendix N).

ORTNCLST: This table links to the RSITESUM table in all three pathways. The relationship is "one to many" when linking with **tnccode**. When linking with **elcode**, the relationship becomes "many to many" in some cases. This table provides common names for series and associations,

and scientific names for associations, as used in Oregon's Natural Heritage Program prior to development of the new national classification in 1996, as well as the new **elcode**. Additional external databases may be available from The Nature Conservancy (TNC) via **elcode**.

SRM/SAF Cover Types: Society for Range Management and Society of American Foresters Cover Types are external published sources of information. OAESIS may be linked to these via the **rct** field of the RSITESUM table in all three pathways. The relationship is "one to many" as there may be many records in RSITESUM for each SRM/SAF cover type.

NLSPNSCI: The NRCS *1971 National List of Scientific Plant Names* (NRCS 1971) as supplemented by the Bureau of Land Management for the Soil-Vegetation Inventory Method (SVIM), and subsequently for ICBEMP, may be linked at some level in all three pathways. When linked to RSITESUM (all three pathways), NLSPNSCI **symbol** provides a legend for **tree**, **shrub**, **herb**, **stree**, and **sshrub** which are aliases for **symbol**. When linked with STRUCTURE, **symbol** provides a legend for **IALGD**, **IASFD . . . . . NPTSD** which are also aliases for **symbol**. Linkage with COMPOSIT via **symbol** provides a legend for the entire plant composition and also provides the path for linking noxious weeds. Links in all cases are "one to many" as there is only one record in NLSPNSCI for each **symbol**.

CULTURPR: This table lists priorities for cultural analysis of selected plants (Hanes 1996). Linkage is in the COMPOSIT pathway by linking **symbol** . The relationship is "one to many" as one CULTURPR record may link to many COMPOSIT records.

NLSPNCOM: This table contains over four thousand common plant names. It may be linked using **symbol** in the same manner as the NLSPNSCI table, or it can be linked to the NLSPNSCI table. Relationships are "many to one" when linked to NLSPNSCI, and "many to many" with the other linkages as there are sometimes more than one common name for an individual species of plant. This table is not complete for the region nor for NLSPNSCI, but it does include an entry for all symbols that are presently in RSITESUM, STRUCTUR, and COMPOSIT.

PRIWHILK: The sole purpose of this table is to provide a bridge to PRIWHI. This table links to STRUCTUR via **icbpvt + woodyclass + herbclass**. The relationship is "one to many".

PRIWHI: Prineville's Wildlife Habitat Interrelationships contain the habitat preferences for reproduction and feeding for over three hundred species of wildlife. Linkage to PRIWHILK is via **wlcomcd**. The relationship is "many to many".

Uses

The OAESIS Rangeland Database is suitable for a variety of ad-hoc uses where the topic of concern is related to the present vegetation, the historic vegetation, or the relationship of present to historic vegetation. With the exception of update modules yet to be developed, OAESIS does not contain any prepackaged outputs. Instead, OAESIS provides raw material (data) for use with standard tools (*Informix*, *ARC/INFO*, *ArcView*, ETC.) in custom building products to meet the user's specifications. OAESIS is lumber while *Informix* and *ARC/INFO* are a hammer and a saw. With lumber, a hammer, and a saw - one can build a house, a deck, a fence, a bridge, or a rocking-horse.

Some examples of outputs that could be produced from OAESIS are:

Maps (and acreage reports) of existing vegetation by class, structure, or species.

Maps of potential vegetation.

A map of the kind of habitat that the Horned Lark prefers for feeding, prefers for reproduction, occasionally uses for feeding, and occasionally uses for reproduction.

A map of "edge" between one kind of plant community and another.

A map of range condition class.

A file of acreages for input into CRBSUM or VDDT..

A map of stands where noxious weeds are 1% or more of the composition.

A map of the distribution and density of cheatgrass.

These and other outputs can further be intersected with other GIS themes to create outputs such as:

The distribution of the kind of habitat preferred by the Wood Duck for reproduction that occurs within one-half mile of perennial streams.

The distribution of noxious weed infested stands in wilderness study areas.

A list of wildlife species that use the kind of habitat contained in a research natural area.

The distribution and density of juniper in a watershed.

Access

1) Acquire access permission and a login to the server where OAESIS resides (currently MUPS B). To get access permission, complete Form OR1264-3 and submit it to the Oregon State Office Security Officer in OR955. When the login has been set up, you will be called with the temporary password and instructions on accessing MUPS B.

2) To view the data tables, you can start *ISQL*, and use Query Language to create SQL queries. Select the OAESIS database by moving the highlight to OR020_01.OAESIS using the arrows on your keyboard and pressing enter.

3) Various views of the data can be created using *Viewpoint* and *Viewpoint Pro*. The data can also be accessed from *ArcView* or *ARC/INFO*.

The master copy of OAESIS that is hosted at the Oregon State Office shall be the official record. The master copy has general read permission and (depending upon the computer configuration available to the user), may be accessed directly, or may be copied to the user's system as a reference copy.

Maintenance

OAESIS was developed with portability in mind. The primary initial uses of OAESIS are expected to be by Oregon/Washington BLM resource professionals using BLM's standard computer hardware and software configuration. However, it is anticipated that others may wish to use our data on their own computer configurations, or they may wish to use OAESIS with their own data.

The OAESIS GIS Theme in *ARC/INFO* can be exported in several different GIS formats as a function of *ARC/INFO*, and there are other GIS systems that can accept *ARC/INFO* formatted data. Similarly, the OAESIS Tables in *Informix* can be exported for use by a number of other relational database managers.

In the interest of maintaining the concept of portability, this maintenance section describes the actions to be taken in two ways.

> (1) The general text describes the steps that need to be taken by the users and state OAESIS data steward to maintain OAESIS.

> (2) The "boxed" text describes the use of OAESIS Maintenance Tools in *Informix*. (To be developed)

OAESIS consists of two basic parts. These are an image (map) which is maintained in *ARC/INFO*, and information about that image which is maintained in *Informix*. Updating the image is a highly interactive process that does not lend itself to procedural documentation in this guide. Instead, close coordination must be maintained between the User, the State OAESIS Data Steward, and the State Office Information Management Section when updating the image.

The OAESIS GIS Theme (the image or map) has a single attribute called **stand**. This attribute is critical as it provides the "glue" for attaching the information maintained in *Informix* to the image. Therefore, it is very important that cross-comparisons are conducted at various points throughout the update process to ensure that **stand**s in the image (*ARC/INFO*) match with **stand**s in the informational database (*Informix*), and vice versa.

Except where otherwise specified, the remainder of this section on maintenance of OAESIS deals with the informational database in *Informix*.

The OAESIS database is compiled from other databases used at the local level. It does not include all data that may have been collected to serve the needs of an individual inventory, nor data associated with an individual point or transect. What OAESIS maintains is a summary of selected information compiled at the stand level for the dominant range site and condition class of the stand.

Therefore, OAESIS does not include specific input "forms". Instead, it is expected that those familiar with and responsible for each inventory will compile their data to the level appropriate for input into OAESIS, and provide it in appropriately formatted *Informix* data tables. The OAESIS Maintenance Tools are provided to (1) perform validity checks on proposed input data and changes (2) update the data contained in OAESIS, (3) classify key elements of the data and (4)

construct the STRUCTURE table.

There are two basic kinds of responsibility in the maintenance of OAESIS. **Users** are responsible for providing clean data for updates. The **State OAESIS Data Steward** is responsible for maintaining system integrity and the process of accomplishing the updates.

User Tasks

Data updates perform three kinds of actions: (1) deletion of existing data, (2) changes to existing data, and (3) addition of new data.

Data updates to **stand** information in OAESIS will be performed by deletion and addition. Changes to existing **stand** information will be performed by deleting the existing data for the **stand** and adding the correct data as new information.

This is done by importing appropriately compiled data into a SITEEDIT (appendix K) and a COMPEDIT (appendix L) table.

Tool to copy empty SITEEDIT and COMPEDIT tables for local use. (To be developed)

The action to be taken is identified in the **action** field of the SITEEDIT table as follows:

Code	Action
D	Delete - When OAESIS is updated, all existing records for the **stand** in the SITECOND, STRUCTUR, and COMPOSIT tables will be deleted, and the polygon for the **stand** in the OAESIS GIS Theme will be assigned a null value. When the desired action is deletion of a stand, only the **action** and the **stand** fields of the SITEEDIT table need to contain entries, and COMPEDIT is not required.
C	Change - When OAESIS is updated, all existing records for the **stand** in the SITECOND, STRUCTUR, and COMPOSIT tables will be deleted. Then, the new **stand** information will be added.
A	Add - When OAESIS is updated, the new **stand** information will be added.

SITEEDIT User Performed Verification Checks

Data: All data fields are input except that where the action is deletion of a stand, only the **action** and the **stand** fields contain data.

Validity: **action** - Critical - Check that entry is **D, C** or **A**. If entry is **A**, check for matching **stand** in SITECOND. If found, correct data to avoid duplication of **stand**.

stand - Critical - check for duplicate records for **stand**. If duplicates are

found, correct data to remove duplication.

date - no built in checks

rsiteno - Critical - blank or match with a **rsiteno** in RSITESUM table. If no match, correct in SITEEDIT or propose an addition to RSITESUM.

condition - blank or match a standard code listed in "table documentation". If no match, either correct in SITEEDIT or propose an amendment to "table documentation".

Tool to run SITEEDIT validity checks. (To be developed)

Computations: none

<u>COMPEDIT</u> User Performed Verification Checks

Data: All data fields are input except **plantclass** which is left blank.

Validity: **stand** - Critical - checked concurrently with **rsiteno** as shown below

date - no built in checks

rsiteno - Critical
not blank. **rsiteno** and **stand** match with SITEEDIT table. There may be **stand**s in SITEEDIT without matching **stand**s in COMPEDIT, but all **stands** in COMPEDIT must have a matching **stand** and **rsiteno** in SITEEDIT.

basis - match with a standard code listed in "table documentation". If no match, either correct in COMPEDIT or propose an amendment to "table documentation".

symbol - Critical - four steps

(a) Check for duplicate records of **stand** plus **symbol**. If duplicates are found, correct data to remove duplication.

(b) match with a **symbol** in NLSPNSCI table. If no match, correct COMPEDIT or propose an addition to NLSPNSCI.

(c) by matching with **symbol**, check for a **Y** in the **keysym** field of the NLSPNSCI table.

(1) If not **Y**, check for a synonym in the NLSPNSCI table that does have a **Y** and change the **symbol** in COMPEDIT.

(2) If there is no synonym with a **Y**, then propose an update for the NLSPNSCI table to include a **Y** for the **symbol** being used.

(d) If adding a **Y** in step (c) above, check **plantclass** field in NLSPNSCI. If blank, propose an update to the NLSPNSCI

plantclass field for the **symbol** being used.

composition - Critical - two checks

(a) Check for composition of zero or greater than 100. If zero, delete the record. If greater than 100, correct the data.

(b) Check total **composition** by **stand**. While total composition is always 100, some variation is normal due to rounding. The data for any **stand**s with total composition less than 90 or greater than 110 should be corrected. This will normally provide a bell-shaped curve with the vast majority of the stands having totals from about 97 to about 103. Correction to narrower limits is at the discretion of the field office.

Tool to run COMPEDIT validity checks. (To be developed)

Computations: Users - none. Leave **plantclass** blank.

State OAESIS Data Steward - compute as follows:

plantclass - computed by posting from NLSPNSCI **plantclass** field by matching **symbol** field when update is performed.

Tool for state data steward's computation and posting of **plantclass** to COMPEDIT. (To be developed)

Users should undertake update efforts only in consultation with the State OAESIS Data Steward. While specific procedures are provided for updating the SITECOND and COMPOSIT tables, other tasks such as adding or changing data in the various supporting tables (NLSPNSCI, RSITESUM, PRIWHILK, etc.) are not being proceduralized.

State OAESIS Data Steward Tasks

There are several things that the State OAESIS Data Steward should do before actually updating the SITECOND, COMPOSIT, and STRUCTURE tables.

First, ensure that a dated master copy of the unaltered OAESIS database is a part of permanent archives.

Next, make any needed changes or additions to the supporting tables in OAESIS with particular emphasis on the NLSPNSCI and RSITESUM tables, and perform all necessary validity checks. The State OAESIS Data Steward is expected to be sufficiently familiar with OAESIS that an exhaustive list of validity checks for supporting tables is not provided here. It should be noted, however, that it is particularly important to verify all relational fields that provide links between tables.

Then, the verification checks specified above under "User Tasks" should be repeated by the State OAESIS Data Steward with the updated supporting tables in place in OAESIS, and **plantclass**

should be posted to the COMPEDIT table.

When the State OAESIS Data Steward is satisfied that the SITEEDIT and COMPEDIT tables are ready for processing, updating can be performed as follows:

1. Where SITEEDIT **action** is **D**
   a. Delete corresponding records matching **stand** in the SITECOND and COMPOSIT tables.
   b. Change the attribute of corresponding polygons matching **stand** in the OAESIS GIS Theme to null.
   c. Delete records where **action** is **D** from SITEEDIT.

2. Where SITEEDIT **action** is **C**
   Delete corresponding records matching **stand** in the SITECOND and COMPOSIT tables.

3. Reorganize the SITEEDIT table by deleting the **action** field such that the resulting table structure and definition is the same as that of the SITECOND table.

4. Append the data from the reformatted SITEEDIT table to the SITECOND table.

5. Append the data from the COMPEDIT table to the COMPOSIT table.

Tool to run steps 1 through 5. (To be developed)

6. Reconstruct the STRUCTUR table:

   a. Empty the existing STRUCTUR table.

   b. Repopulate the STRUCTUR table from data in the COMPOSIT table such that:

      (1) There is one record in STRUCTUR for each **stand** in COMPOSIT, and **stand, date, rsiteno,** and **basis** are the same for each **stand** in STRUCTUR as they were in COMPOSIT.

      (2) The STRUCTUR fields **IALFP** through **NPTSD** summarize each **stand** from COMPOSIT as follows:

      IALFP is the total **composition** for **plantcode** IALF
      IALFD is the **symbol** with the greatest **composition** in **plantcode** IALF
      IALGP is the total **composition** for **plantcode** IALG
      IALGD is the **symbol** with the greatest **composition** in **plantcode** IALG
      IASFP is the total **composition** for **plantcode** IASF
      IASFD is the **symbol** with the greatest **composition** in **plantcode** IASF
      IASGP is the total **composition** for **plantcode** IASG
      IASGD is the **symbol** with the greatest **composition** in **plantcode** IASG
      IPLFP is the total **composition** for **plantcode** IPLF

IPLFD is the **symbol** with the greatest **composition** in **plantcode** IPLF
IPLGP is the total **composition** for **plantcode** IPLG
IPLGD is the **symbol** with the greatest **composition** in **plantcode** IPLG
IPLSP is the total **composition** for **plantcode** IPLS
IPLSD is the **symbol** with the greatest **composition** in **plantcode** IPLS
IPMSP is the total **composition** for **plantcode** IPMS
IPMSD is the **symbol** with the greatest **composition** in **plantcode** IPMS
IPSFP is the total **composition** for **plantcode** IPSF
IPSFD is the **symbol** with the greatest **composition** in **plantcode** IPSF
IPSGP is the total **composition** for **plantcode** IPSG
IPSGD is the **symbol** with the greatest **composition** in **plantcode** IPSG
IPTP is the total **composition** for **plantcode** IPT
IPTD is the **symbol** with the greatest **composition** in **plantcode** IPT
IPTSP is the total **composition** for **plantcode** IPTS
IPTSD is the **symbol** with the greatest **composition** in **plantcode** IPTS
NALFP is the total **composition** for **plantcode** NALF
NALFD is the **symbol** with the greatest **composition** in **plantcode** NALF
NALGP is the total **composition** for **plantcode** NALG
NALGD is the **symbol** with the greatest **composition** in **plantcode** NALG
NASFP is the total **composition** for **plantcode** NASF
NASFD is the **symbol** with the greatest **composition** in **plantcode** NASF
NASGP is the total **composition** for **plantcode** NASG
NASGD is the **symbol** with the greatest **composition** in **plantcode** NASG
NPLFP is the total **composition** for **plantcode** NPLF
NPLFD is the **symbol** with the greatest **composition** in **plantcode** NPLF
NPLGP is the total **composition** for **plantcode** NPLG
NPLGD is the **symbol** with the greatest **composition** in **plantcode** NPLG
NPLSP is the total **composition** for **plantcode** NPLS
NPLSD is the **symbol** with the greatest **composition** in **plantcode** NPLS
NPMSP is the total **composition** for **plantcode** NPMS
NPMSD is the **symbol** with the greatest **composition** in **plantcode** NPMS
NPSFP is the total **composition** for **plantcode** NPSF
NPSFD is the **symbol** with the greatest **composition** in **plantcode** NPSF
NPSGP is the total **composition** for **plantcode** NPSG
NPSGD is the **symbol** with the greatest **composition** in **plantcode** NPSG
NPTP is the total **composition** for **plantcode** NPT
NPTD is the **symbol** with the greatest **composition** in **plantcode** NPT
NPTSP is the total **composition** for **plantcode** NPTS
NPTSD is the **symbol** with the greatest **composition** in **plantcode** NPTS

When identifying the **symbol** for the **xxxxD** fields, there will be situations where there is a tie among two or more symbols for greatest composition within a **plantcode**. In such instances, merely use the symbol that is "greatest" in alphabetical order. For example, if ARTRV and PUTR2 are tied for greatest in **plantcode** NPMS with a **composition** of 10 each, use PUTR2.

(3) **icbpvt** is posted from RSITESUM by matching **rsiteno**.

(4) **woodyclass** is calculated as:

OS where: (IPLSP+IPMSP+IPTP+IPTSP+NPLSP+NPMSP+NPTP+NPTSP) is equal or greater than 10 and less than 50
and
(IPLSP+IPMSP+IPTSP+NPLSP+NPMSP+NPTSP) is greater than (IPTP+NPTP)

OW where: (IPLSP+IPMSP+IPTP+IPTSP+NPLSP+NPMSP+NPTP+NPTSP) is equal or greater than 10 and less than 50
and
(IPLSP+IPMSP+IPTSP+NPLSP+NPMSP+NPTSP) is less than or equal (IPTP+NPTP)

CS where: (IPLSP+IPMSP+IPTP+IPTSP+NPLSP+NPMSP+NPTP+NPTSP) is equal or greater than 50
and
(IPLSP+IPMSP+IPTSP+NPLSP+NPMSP+NPTSP) is greater than (IPTP+NPTP)

CW where: (IPLSP+IPMSP+IPTP+IPTSP+NPLSP+NPMSP+NPTP+NPTSP) is equal or greater than 50
and
(IPLSP+IPMSP+IPTSP+NPLSP+NPMSP+NPTSP) is less than or equal (IPTP+NPTP)

blank where not OS, OW, CS, or CW.

(5) **herbclass** is calculated as:

NB where: (NALFP+NALGP+NASFP+NASGP+NPLFP+NPLGP+NPSFP+NPSGP) is equal or greater than
(IALFP+IALGP+IASFP+IASGP+IPLFP+IPLGP+IPSFP+IPSGP)
and
NPLGP is equal or greater than
(NALFP+NALGP+NASFP+NASGP+NPLFP+NPSFP+NPSGP)

NO where: (NALFP+NALGP+NASFP+NASGP+NPLFP+NPLGP+NPSFP+NPSGP) is equal or greater than
(IALFP+IALGP+IASFP+IASGP+IPLFP+IPLGP+IPSFP+IPSGP)
and
NPLGP is less than
(NALFP+NALGP+NASFP+NASGP+NPLFP+NPSFP+NPSGP)

XB where: (NALFP+NALGP+NASFP+NASGP+NPLFP+NPLGP+NPSFP+NPSGP) is less than
(IALFP+IALGP+IASFP+IASGP+IPLFP+IPLGP+IPSFP+IPSGP)
and
IPLGP is equal or greater than

(IALFP+IALGP+IASFP+IASGP+IPLFP+IPSFP+IPSGP)

XO where: (NALFP+NALGP+NASFP+NASGP+NPLFP+NPLGP+NPSFP+NPSGP) is less than (IALFP+IALGP+IASFP+IASGP+IPLFP+IPLGP+IPSFP+IPSGP)

and

IPLGP is less than (IALFP+IALGP+IASFP+IASGP+IPLFP+IPSFP+IPSGP)

Tool to reconstruct STRUCTUR table (step 6). (To be developed)

7. When the above informational database updates have been completed in *Informix*, and all necessary updates have been made to the image in *ARC/INFO*, the State OAESIS Data Steward needs to test the updated OAESIS to ensure that the updates were accurate and OAESIS is performing properly. In addition to checking various fields in various tables for legitimate entries and proper calculations, an assortment of applications that have been successfully accomplished with the pre-update version of OAESIS should be repeated with the updated version and the results compared.

When the State OAESIS Data Steward has determined that OAESIS has been successfully updated, **a dated master copy should be placed in permanent archives for the historical record.** All master copies that are archived over time should be saved indefinitely as a basis for monitoring long-term trends.

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In addition to specific references cited above, the several hundred range site descriptions referenced within the RSITESUM table of OAESIS are incorporated.

Appendices

RANGE SITE AND CONDITION CLASS
Table Documentation

Table Name: SITECOND

Field	Type	Width	Comments
stand	character	5	stand identifier. Last four characters follow standard BLM Ecological Site Inventory conventions for identifying Site Writeup Areas (SWAs) in the form X999. First character identifies the inventory as follows: A Brothers inventory, Prineville District B Two Rivers inventory, Prineville District C John Day inventory, Prineville District D Southern Malheur inventory, Vale District E Spokane inventory, Spokane District F reserved for Medford inventory, Medford District G Three Rivers inventory, Burns District H Andrews inventory, Burns District I-U reserved V Boise mid-scale subsample, Boise District W Burley mid-scale subsample, Burley District X Idaho Falls mid-scale subsample, Idaho Falls District Y Salmon mid-scale subsample, Salmon District Z Shoshone mid-scale subsample, Shoshone District
date	character	6	date of writeup. form = YYMMDD
rsiteno	character	12	NRCS Range Site Number in form MMMAANNNSS__ where MMM is MLRA number (eg. 023), AA is MLRA subarea (eg. XY), NNN is number (eg 001) and SS is state (eg. OR). Note: "ZZ" was used for subarea to identify "filler" numbers assigned where the NRCS number was unknown. See the RSITESUM table for list.
condition	character	2	condition class or other designation Natural Vegetation CN Climax (76-100% of climax plant community present) LN Late Seral (51-75%) MN Mid Seral (26-50%) ES Early Seral (0-25%)

Seedings

ES	Excellent Seeding
GS	Good Seeding
FS	Fair Seeding
PS	Poor Seeding

Miscellaneous Land Types

RK	rock, talus, rubble, escarpments, etc.
RW	riverwash and water
BA	badlands and dunelands
TR	timber
PL	playa
FD	fields and abandoned fields
BD	burned

Data Source: BLM SVIM and Ecological Site Inventory (ESI) inventories (BLM 1980; BLM 1984; BLM 1991; BLM 1992; Eshelman 1989)..

Area of Coverage: BLM lands and intermingled lands of other ownership in the areas covered by the inventories listed above in comments for the "stand" field..

File Creator: Larry Walker, Oregon State Office, Bureau of Land Management

PLANT COMMUNITY STRUCTURE
Table Documentation

Table Name: STRUCTUR

Field	Type	Width	Comments
stand	character	5	stand identifier. Last four characters follow standard BLM Ecological Site Inventory conventions for identifying Site Writeup Areas (SWAs) in the form X999. First character identifies the inventory as follows: A Brothers inventory, Prineville District B Two Rivers inventory, Prineville District C John Day inventory, Prineville District D Southern Malheur inventory, Vale District E Spokane inventory, Spokane District F reserved for Medford inventory, Medford District G Three Rivers inventory, Burns District H Andrews inventory, Burns District I-U reserved V Boise mid-scale subsample, Boise District W Burley mid-scale subsample, Burley District X Idaho Falls mid-scale subsample, Idaho Falls District Y Salmon mid-scale subsample, Salmon District Z Shoshone mid-scale subsample, Shoshone District
date	character	6	date of writeup. form = YYMMDD
rsiteno	character	12	NRCS Range Site Number in form MMMAANNNSS__ where MMM is MLRA number (eg. 023), AA is MLRA subarea (eg. XY), NNN is number (eg 001) and SS is state (eg. OR). Note: "ZZ" was used for subarea to identify "filler" numbers assigned where the NRCS number was unknown. See the table RSITESUM for list.
basis	character	7	the basis for the stand composition information SAMPLED the stand was sampled or determined to be the same as a sampled stand. SITCDAS the data is the average of a strata consisting of samples within the same range site, condition class, and existing vegetation association within the same inventory. PVTCDAS the data is the average of a strata consisting of the same ICBEMP potential vegetation type, condition

			class, and existing vegetation association. Spokane and Two Rivers inventories combined for this stratification.
			PVTCDSE the data is the average of a strata consisting of the same ICBEMP potential vegetation type, condition class, and vegetation series. Spokane and Two Rivers inventories combined for this stratification.
IALFP	integer	3	Percent composition (based on annual production of above-ground biomass) of Introduced Annual Large Forbs.
IALFD	character	7	Dominant Introduced Annual Large Forb (based on percent composition). Plant Species Symbol is from the NRCS 1971 *National List of Scientific Plant Names* as supplemented by BLM for use with the Soil and Vegetation Inventory Method (SVIM), or see the table NLSPNSCI.
IALGP	integer	3	Percent Introduced Annual Large Grasses
IALGD	character	7	Dominant Introduced Annual Large Grass
IASFP	integer	3	Percent Introduced Annual Small Forbs
IASFD	character	7	Dominant Introduced Annual Small Forb
IASGP	integer	3	Percent Introduced Annual Small Grasses
IASGD	character	7	Dominant Introduced Annual Small Grass
IPLFP	integer	3	Percent Introduced Perennial Large Forbs
IPLFD	character	7	Dominant Introduced Perennial Large Forb
IPLGP	integer	3	Percent Introduced Perennial Large Grasses
IPLGD	character	7	Dominant Introduced Perennial Large Grass
IPLSP	integer	3	Percent Introduced (perennial) Low Shrubs
IPLSD	character	7	Dominant Introduced (perennial) Low Shrub
IPMSP	integer	3	Percent Introduced (perennial) Mid Shrubs
IPMSD	character	7	Dominant Introduced (perennial) Mid Shrub
IPSFP	integer	3	Percent Introduced Perennial Short Forbs
IPSFD	character	7	Dominant Introduced Perennial Short Forb
IPSGP	integer	3	Percent Introduced Perennial Small Grasses
IPSGD	character	7	Dominant Introduced Perennial Small Grass
IPTP	integer	3	Percent Introduced (perennial) Trees
IPTD	character	7	Dominant Introduced (perennial) Tree
IPTSP	integer	3	Percent Introduced (perennial) Tall Shrubs
IPTSD	character	7	Dominant Introduced (perennial) Tall Shrub
NALFP	integer	3	Percent Native Annual Large Forbs
NALFD	character	7	Dominant Native Annual Large Forb
NALGP	integer	3	Percent Native Annual Large Grasses
NALGD	character	7	Dominant Native Annual Large Grass
NASFP	integer	3	Percent Native Annual Small Forbs
NASFD	character	7	Dominant Native Annual Small Forb
NASGP	integer	3	Percent Native Annual Small Grasses
NASGD	character	7	Dominant Native Annual Small Grass

NPLFP	integer	3	Percent Native Perennial Large Forbs
NPLFD	character	7	Dominant Native Perennial Large Forb
NPLGP	integer	3	Percent Native Perennial Large Grasses
NPLGD	character	7	Dominant Native Perennial Large Grass
NPLSP	integer	3	Percent Native (perennial) Low Shrubs
NPLSD	character	7	Dominant Native (perennial) Low Shrub
NPMSP	integer	3	Percent Native (perennial) Mid Shrubs
NPMSD	character	7	Dominant Native (perennial) Mid Shrub
NPSFP	integer	3	Percent Native Perennial Small Forbs
NPSFD	character	7	Dominant Native Perennial Small Forb
NPSGP	integer	3	Percent Native Perennial Small Grasses
NPSGD	character	7	Dominant Native Perennial Small Grass
NPTP	integer	3	Percent Native (perennial) Trees
NPTD	character	7	Dominant Native (perennial) Tree
NPTSP	integer	3	Percent Native (perennial) Tall Shrubs
NPTSD	character	7	Dominant Native (perennial) Tall Shrub
icbpvt	character	5	ICBEMP potential vegetation type (abbreviation)
woodyclass	character	2	Woody Classification: blank less than 10% woody vegetation OS Open Shrub - 10% to 50% woody with trees less than shrubs. OW Open Woodland - 10% to 50% woody with trees greater than or equal shrubs. CS Closed Shrub - greater than 50% woody with trees less than shrubs. CW Closed Woodland - greater than 50% woody with trees greater than or equal shrubs.
herbclass	character	2	Herbaceous Classification: NB Native Bunchgrass - native herbs greater than or equal exotic herbs with native large perennial grasses greater than or equal other native herbs. NO Native Other - native herbs greater than or equal exotic herbs with native large perennial grasses less than other native herbs. XB Exotic Bunchgrass - exotic herbs greater than native herbs with exotic large perennial grasses greater than or equal other exotic herbs. XO Exotic Other - exotic herbs greater than native herbs with exotic large perennial grasses less than other native herbs.

Note: Percents may not total 100 due to rounding.

Data Source: BLM SVIM and Ecological Site Inventory (ESI) inventories (BLM 1980; BLM 1984; BLM 1991; BLM 1992; Eshelman 1989)..

Area of Coverage: BLM lands and intermingled lands of other ownership in the areas covered

by the inventories listed above in comments for the "stand" field..

File Creator: Larry Walker, Oregon State Office, Bureau of Land Management

STAND SPECIES COMPOSITION
Table Documentation

Table Name: COMPOSIT

Field	Type	Width	Comments
stand	character	5	stand identifier. Last four characters follow standard BLM Ecological Site Inventory conventions for identifying Site Writeup Areas (SWAs) in the form X999. First character identifies the inventory as follows: A Brothers inventory, Prineville District B Two Rivers inventory, Prineville District C John Day inventory, Prineville District D Southern Malheur inventory, Vale District E Spokane inventory, Spokane District F reserved for Medford inventory, Medford District G Three Rivers inventory, Burns District H Andrews inventory, Burns District I-U reserved V Boise mid-scale subsample, Boise District W Burley mid-scale subsample, Burley District X Idaho Falls mid-scale subsample, Idaho Falls District Y Salmon mid-scale subsample, Salmon District Z Shoshone mid-scale subsample, Shoshone District
date	character	6	date of writeup. form = YYMMDD
rsiteno	character	12	NRCS Range Site Number in form MMMAANNNSS__ where MMM is MLRA number (eg. 023), AA is MLRA subarea (eg. XY), NNN is number (eg 001) and SS is state (eg. OR). Note: "ZZ" was used for subarea to identify "filler" numbers assigned where the NRCS number was unknown. See the table RSITESUM for list.
basis	character	7	the basis for stand composition information SAMPLED the stand was sampled or determined to be the same as a sampled stand. SITCDAS the data is the average of a strata consisting of samples within the same range site, condition class, and existing vegetation association within the same inventory. PVTCDAS the data is the average of a strata consisting of the same ICBEMP potential vegetation type, condition

			class, and existing vegetation association. Spokane and Two Rivers inventories combined for this stratification.
			PVTCDSE the data is the average of a strata consisting of the same ICBEMP potential vegetation type, condition class, and vegetation series. Spokane and Two Rivers inventories combined for this stratification.
symbol	character	7	See NRCS 1971 *National List of Scientific Plant Names* (NLSPN) for conventions. See table NLSPNSCI.
composition	integer	3	Percent composition (based on annual production of above-ground vegetation, air dried)
plantclass	character	4	Plant source (1st character), life cycle (2nd character), and size/form (3rd & 4th characters) as follows: source: I = introduced, N = native life cycle: A = annual, P = perennial size/form: SF small forb; LF large forb; SG small grass; LG large grass; LS low shrub; MS mid shrub; TS tall shrub; T tree

Note: Percents may not total 100 due to rounding.

Data Source: BLM SVIM and Ecological Site Inventory (ESI) inventories (BLM 1980; BLM 1984; BLM 1991; BLM 1992; Eshelman 1989)..

Area of Coverage: BLM lands and intermingled lands of other ownership in the areas covered by the inventories listed above in comments for the "stand" field..

File Creator: Larry Walker, Oregon State Office, Bureau of Land Management

RANGE SITE SUMMARY
Table Documentation

Table Name: RSITESUM

Field	Type	Width	Comments
year	character	4	year of NRCS Range Site Description
rsiteno	character	12	NRCS Range Site Number in form MMMAANNNSS__ where MMM is MLRA number (eg. 023), AA is MLRA subarea (eg. XY), NNN is number (eg 001) and SS is state (eg. OR). Note: "ZZ" was used for subarea to identify "filler" numbers assigned where the NRCS number was unknown.
state	character	2	state responsible for NRCS Range Site Description
mlra	character	3	Major Land Resource Area (eg. B06, B10, D23, etc.)
esname	character	40	Range Site Name
minslope	integer	2	minimum % slope of slope range
maxslope	integer	2	maximum % slope of slope range Note: a zero in maxslope indicates slope range is unknown
aspect	character	1	blank if aspect not site determining, N if north and east, S if south and west
minelev	integer	5	minimum elevation of elevation range in feet
maxelev	integer	5	maximum elevation of elevation range in feet Note: a zero in maxelev indicates elevation range is unknown
minprecip	integer	2	minimum annual precipitation of precipitation range in inches
maxprecip	integer	2	maximum annual precipitation of precipitation range in inches Note: a zero in maxprecip indicates precipitation range is unknown
warm	character	1	warmest of soil temperature regime range
cold	character	1	coldest of soil temperature regime range M = mesic, F = frigid, C = cryic
mat	integer	2	degrees F. of mean annual air temperature Note: a zero indicates mat is unknown
ffmin	integer	3	minimum of consecutive frost-free days range
ffmax	integer	3	maximum of consecutive frost-free days range Note: a zero in ffmax indicates frost-free days range is unknown
mintex	integer	1	coarsest of soil surface texture range
maxtex	integer	1	finest of soil surface texture range 0 = unknown, 1 = sands, 2 = loamy sands & sandy loams, 3 = loams & silts, 4 = clay loams, 5 = clays

other	character	10	"COARSEFRAG" if surface texture modifier is <u>always</u> gravelly, cobbly, stony, etc., otherwise blank
mindp	integer	2	minimum of soil depth range to bedrock/restrictive layer in inches
maxdp	integer	2	maximum of soil depth range to bedrock/restrictive layer in inches Note: a zero in maxdp indicates soil depth range is unknown
dmin	integer	1	minimum soil drainage of range
dmax	integer	1	maximum soil drainage of range 0 = unknown, 1 = poorly, 2 = somewhat poorly, 3 = well, 4 = somewhat excessively, 5 = excessively
alkali	character	3	"YES" if the site description indicates that the presence of sodium affects the plant community, otherwise blank
pmin	integer	1	minimum soil permeability rate of range
pmax	integer	1	maximum soil permeability rate of range 0 = unknown, 1 = slow, 2 = moderately slow, 3 = moderate, 4 = moderately rapid, 5 = rapid
awcmin	integer	2	minimum of range of available water holding capacity of soil profile in inches
awcmax	integer	2	maximum of range of available water holding capacity of soil profile in inches Note: a zero in awcmax indicates available water holding capacity is unknown
wmin	integer	1	minimum of range of wind erosion hazard
wmax	integer	1	maximum of range of wind erosion hazard 0 = unknown, 1 = slight, 2 = moderate, 3 = severe
hmin	integer	1	minimum of range of water erosion hazard
hmax	integer	1	maximum of range of water erosion hazard 0 = unknown, 1 = slight, 2 = moderate, 3 = severe
tree	character	7	dominant tree if total trees are 10% or more of potential vegetation (annual production of above ground biomass). See the NLSPNSCI table for plant species symbols.
shrub	character	7	dominant shrub if shrubs and trees are 10% or more of potential vegetation (annual production of above ground biomass)
herb	character	7	dominant herbaceous species (annual production of above ground biomass)
rct	character	6	range cover type. Codes with SAF prefix consistent with (Eyre 1980). Codes with SRM prefix consistent with (Shiflet 1994). **SAF210 -** Interior Douglas-fir **SAF217 -** Aspen

			SAF233 - Oregon white oak **SAF235** - Cottonwood-willow **SAF237** - Interior ponderosa pine **SRM101** - Bluebunch Wheatgrass **SRM102** - Idaho Fescue **SRM104** - Antelope Bitterbrush-Bluebunch Wheatgrass **SRM105** - Antelope Bitterbrush-Idaho Fescue **SRM106** - Bluegrass Scabland **SRM313** - Tufted Hairgrass-Sedge **SRM401** - Basin Big Sagebrush **SRM402** - Mountain Big Sagebrush **SRM403** - Wyoming Big Sagebrush **SRM404** - Threetip Sagebrush **SRM405** - Black Sagebrush **SRM406** - Low Sagebrush **SRM407** - Stiff Sagebrush **SRM408** - Other Sagebrush Types **SRM410** - Alpine Rangeland **SRM412** - Juniper - Pinyon Woodland **SRM414** - Salt Desert Shrub **SRM415** - Curlleaf Mountain Mahogany **SRM421** - Chokecherry - Serviceberry - Rose **SRM422** - Riparian
icbpvt	character	5	ICBEMP potential vegetation type for linkage with VDDT/CRBSUM. Codes consistent with (Keane and others 1996) unless otherwise noted. **ACANA** - Silver Sagebrush (not in Keane etal). **AGST** - Agropyron Steppe **ASPEN** - Aspen **BSBW** - Basin Big Sage/Wildrye **BSMJ** - Mountain Big Sage Mesic West with Juniper **BSMW** - Mountain Big Sage - Mesic - West **CEW1** - Mountain Mahogany Woodland without Sage **CEW2** - Mountain Mahogany Woodland with Sage **CTRV** - Cottonwood Riverine **DRDFB** - Dry Douglas-fir with Ponderosa Pine **FESC** - Fescue Grassland **INTPP** - Interior Ponderosa Pine **LSME** - Low Sage - Mesic **LSMJ** - Low Sage - Mesic with Juniper **LSXE** - Low Sage - Xeric **LSXJ** - Low Sage - Xeric with Juniper **MTSH** - Mountain Shrub **PUTR** - *Purshia Tridentata*

			RIGR - Riparian Graminoid **RUSH** - Spikerush Wetland (not in Keane etal) **SALX** - *Salix/Carex* **SARP** - Saltbrush Riparian (or saline riparian) **SDSH** - Salt Desert Shrub **TTSA** - Three Tip Sage **WBSC** - Wyoming Big Sage - Cool **WBSW** - Wyoming Big Sage - Warm **WOAK** - Oregon White Oak (**WHTOK** in Keane etal)
tnccode	character	10	Old The Nature Conservancy state code for Oregon. See the ORTNCLST table for a list. Note: The limited number of range sites in the Columbia Basin that support Utah juniper were assigned to the closest corresponding tnccode for western juniper.
elcode	character	10	Natural Heritage Program ELCODE. See ORTNCLST table for list of inventoried associations, or *Oregon Natural Heritage Program, Natural (Presettlement) Vegetation Classification* for full list.
stree	character	7	"significant" tree where needed to determine rct, icbpvt, tnccode, or elcode and trees are less than 10% of potential vegetation
sshrub	character	7	"significant" shrub where needed to determine rct, icbpvt, tnccode, or elcode and shrubs and trees are less than 10% of potential vegetation

Data Source: Review and interpretation of NRCS Range Site Descriptions (NRCS 1976; range site descriptions as listed in table). Soils properties and classes reflect *Soil Taxonomy* (NRCS 1975).

Area of Coverage: -Oregon - all Range Site Descriptions east of Cascades
-Washington - Range Site Descriptions for areas with BLM soil/vegetation inventory data
-Idaho - Range Site Descriptions for ICBEMP Photo Interpretation Subsample polygons

File Creator: Larry Walker, Oregon State Office, Bureau of Land Management

File Cautions: Some software forces a zero in any "blank" integer and numeric fields (see notes in preceding comments). The user needs to keep this in mind and exclude records as appropriate when making tabulations.

OREGON NATURE CONSERVANCY CODES
Table Documentation

Table Name: ORTNCLST

Field	Type	Width	Comments
elcode	character	10	The TNC National Code for the element. A unique 10 byte, alpha-numeric code used by all heritage programs.
tnccode	character	10	The old code used by the Oregon Natural Heritage program prior to development of elcodes. Unique within Oregon, but not between states.
series	character	39	Common name assigned for a group of "plant associations"
scientific	character	105	Name of a specific plant association expressed in terms of the scientific names of dominant species.
common	character	74	Name of a specific plant association expressed in terms of the common names of dominant species.

Data Source: Transcribed from a list titled "Oregon Natural Heritage Program, Natural (Presettlement) Vegetation Classification - 5/;94" provided by Jim Kagan (Kagan 1994) . This was prior to development of elcodes (Bourgeron and Engelking 1994) and the current *Oregon Natural Heritage Program, Natural (Presettlement) Vegetation Classification* dated April 1996 (Kagan and others 1996). "elcode" has been added for conversion between lists.

Area of Coverage: Oregon

File Creator Larry Walker, Oregon State Office, Bureau of Land Management

1971 NATIONAL LIST OF SCIENTIFIC PLANT NAMES (NLSPN)
AS SUPPLEMENTED FOR SVIM/ESI AND ICBEMP
Table Documentation

Table Name: NLSPNSCI

Field	Type	Width	Comments
Symbol	character	7	Species Symbol (see NLSPN for conventions)
Character	character	6	Plant characteristics (see NLSPN for conventions and codes)
Regions	character	13	Regions of distribution (see NLSPN)
Type	character	2	Annual or perennial; tree, shrub, grass or forb.
Genus	character	20	Scientific plant nomenclature
Species	character	20	"
Variety	character	20	"
plantclass	character	4	Plant source (1st character), life cycle (2nd character), and size/form (3rd & 4th characters) as follows: source: I = introduced, N = native life cycle: A = annual, P = perennial size/form: SF small forb; LF large forb; SG small grass; LG large grass; LS low shrub; MS mid shrub; TS tall shrub; T tree
ornox	character	2	OR if a designated noxious weed in Oregon, otherwise blank.
wanox	character	2	WA if a designated noxious weed in Washington, otherwise blank.
keysym	character	1	Y if a key symbol for use in OAESIS database. Used to limit occurrence of synonyms and resultant fragmentation in the database.

Data Source: NRCS *National List of Scientific Plant Names* (NRCS 1971) as supplemented by BLM for use with the Soil and Vegetation Inventory Method (BLM 1991).

Additions for other symbols/plants used by the Forest Service (identified as "f.s. list" in the "Regions" field) (Pierce 1995).

Plantclass assigned by Interior Columbia Basin Ecosystem Management Project Range Vegetation Dynamics Team members John Pierce, Charlie Johnson, and Larry Walker. Size classes were assigned subjectively with neither firm class definitions nor actual plant size data. Coordinated corrections, additions, and refinements over time would be welcome.

Noxious classifications from applicable State Department of Agriculture classifications (ODA 1993; WDA 1993).

Area of Coverage: National

File Creator: Larry Walker, Oregon State Office, Bureau of Land Management

CULTURAL PRIORITIES OF PLANTS
Table Documentation

Table Name: CULTURPR

Field	Type	Width	Comments
Symbol	character	7	Species Symbol (see NLSPN for conventions)
Priority	character	1	Priority for cultural analysis V = very high H = high M = moderate L = low

Data Source: Revised plant list purged of references to use and reorganized into 4 priority categories for analysis (Hanes 1996).

Area of Coverage: Interior Pacific Northwest

File Creator Larry Walker, Oregon State Office, Bureau of Land Management

LIST OF COMMON PLANT NAMES
Table Documentation

Table Name: NLSPNCOM

Field	Type	Width	Comments
Symbol	character	7	Species Symbol (see 1971 NLSPN for conventions)
Common	character	35	Common plant name

Data Source: SVIM data element dictionary (BLM 1991). Some additions from NRCS 1981 *National Handbook of Plant Names* (NRCS 1981) and Oregon State University *Northwest Common-Name Check List of Plants* (Anderson and Bedell 1987). Symbols compatible with NRCS 1971 *National List of Scientific Plant Names* (NRCS 1971).

Area of Coverage: National

File Creator: Larry Walker, Oregon State Office, Bureau of Land Management

PRINEVILLE WILDLIFE HABITAT INTERRELATIONSHIPS LINK
Table Documentation

Table Name: PRIWHILK

Field	Type	Width	Comments
icbpvt	character	5	ICBEMP potential vegetation type (see table STRUCTUR)
woodyclass	character	2	Woody classification (see table STRUCTUR)
herbclass	character	2	Herbaceous classification (see table STRUCTUR)
wlcomcd	character	3	Code for wildlife plant community type (see table PRIWHI)

Data Source: The wildlife plant community types (table PRIWHI) were compared with a tabulation of average structures for each combination of icbpvt+woodyclass+herbclass from table STRUCTUR.

Area of Coverage: Prineville District. Some applicability to rangelands throughout eastern Oregon and Washington.

File Creator: Larry Walker, Oregon State Office, Bureau of Land Management

Notes: Use to link table PRIWHI with table STRUCTUR.
link to STRUCTUR by matching icbpvt + woodyclass + herbclass
link to PRIWHI by matching wlcomcd

PRINEVILLE WILDLIFE HABITAT INTERRELATIONSHIPS
Table Documentation

Table Name: PRIWHI

Field	Type	Width	Comments
wlsymbol	character	7	Coded symbol assigned to a wildlife species.
wlcommon	character	33	Common name of wildlife species
wlscientific	character	32	Scientific name of wildlife species
wlgroupcd	integer	2	Code for wildlife species group (eg. fish, amphibian, reptile, etc.)
wlgroup	character	11	Wildlife species group.
wlformcd	integer	2	Code for wildlife life history form class based on reproduction and feeding requirements.
formrepro	character	80	Reproduction requirements for wildlife form class
formfeed	character	80	Feeding requirements for wildlife form class
wlintcd	integer	2	Code for special interest groups of species (eg. waterfowl, upland game, big game, raptors, etc.)
wlinterest	character	23	Special interest groups of species.
wlabundcd	character	1	Code for relative abundance of species in Prineville District (very rare, rare, common, etc.)
wlabundance	character	14	Relative abundance of species in Prineville District
wlcomcd	character	3	Code for plant community type
wlcommunity	character	20	Plant community type
repro	character	2	RP = plant community preferred for reproduction RO = plant community occasionally used for reproduction
feed	character	2	FP = plant community preferred for feeding FO = plant community occasionally used for feeding
usebasis	character	3	OBS = indicated use of plant community based on local observations LIT = indicated use of plant community based on literature

Data Source: *Wildlife Habitat Interrelationships for the Brothers EIS Area in Central Oregon* (Elmore and Walker 1982) as updated for District-wide application during preparation of *Two Rivers Resource Management Plan Environmental Impact Statement* (1985). Approximates a subset of *Wildlife Habitats in Managed Rangelands -- The Great Basin of Southeastern Oregon, Plant Communities and Their Importance to Wildlife* (Dealy and others 1981), *The Relationship of Terrestrial Vertebrates to Plant Communities and Structural Conditions* (Maser and others 1984).

Area of Coverage: Prineville District. Some applicability to rangelands throughout eastern Oregon and Washington.

File Creator:	Larry Walker, Oregon State Office, Bureau of Land Management
Notes:	Use PRIWHILK table to link with STRUCTUR table.

RANGE SITE AND CONDITION CLASS UPDATE TABLE
Table Documentation

Table Name: SITEEDIT

Field	Type	Width	Comments
action	character	1	action to be taken: D Delete C Change A Add
stand	character	5	stand identifier. Last four characters follow standard BLM Ecological Site Inventory conventions for identifying Site Writeup Areas (SWAs) in the form X999. First character identifies the inventory as follows: A Brothers inventory, Prineville District B Two Rivers inventory, Prineville District C John Day inventory, Prineville District D Southern Malheur inventory, Vale District E Spokane inventory, Spokane District F reserved for Medford inventory, Medford District G Three Rivers inventory, Burns District H Andrews inventory, Burns District I-U reserved V Boise mid-scale subsample, Boise District W Burley mid-scale subsample, Burley District X Idaho Falls mid-scale subsample, Idaho Falls District Y Salmon mid-scale subsample, Salmon District Z Shoshone mid-scale subsample, Shoshone District
date	character	6	date of writeup. form = YYMMDD
rsiteno	character	12	NRCS Range Site Number in form MMMAANNNSS__ where MMM is MLRA number (eg. 023), AA is MLRA subarea (eg. XY), NNN is number (eg 001) and SS is state (eg. OR). Note: "ZZ" was used for subarea to identify "filler" numbers assigned where the NRCS number was unknown. See the RSITESUM table for list.
condition	character	2	condition class or other designation Natural Vegetation CN Climax (76-100% of climax plant community present) LN Late Seral (51-75%) MN Mid Seral (26-50%) ES Early Seral (0-25%)

Seedings

ES	Excellent Seeding
GS	Good Seeding
FS	Fair Seeding
PS	Poor Seeding

Miscellaneous Land Types

RK	rock, talus, rubble, escarpments, etc.
RW	riverwash and water
BA	badlands and dunelands
TR	timber
PL	playa
FD	fields and abandoned fields
BD	burned

Purpose: This table, along with the COMPEDIT table, is used to update OAESIS. The first field in this table specifies the action to be taken. Otherwise, the format of this table is identical to the format of the SITECOND table.

STAND SPECIES COMPOSITION UPDATE TABLE
Table Documentation

Table Name: COMPEDIT

Field	Type	Width	Comments
stand	character	5	stand identifier. Last four characters follow standard BLM Ecological Site Inventory conventions for identifying Site Writeup Areas (SWAs) in the form X999. First character identifies the inventory as follows: A Brothers inventory, Prineville District B Two Rivers inventory, Prineville District C John Day inventory, Prineville District D Southern Malheur inventory, Vale District E Spokane inventory, Spokane District F reserved for Medford inventory, Medford District G Three Rivers inventory, Burns District H Andrews inventory, Burns District I-U reserved V Boise mid-scale subsample, Boise District W Burley mid-scale subsample, Burley District X Idaho Falls mid-scale subsample, Idaho Falls District Y Salmon mid-scale subsample, Salmon District Z Shoshone mid-scale subsample, Shoshone District
date	character	6	date of writeup. form = YYMMDD
rsiteno	character	12	NRCS Range Site Number in form MMMAANNNSS__ where MMM is MLRA number (eg. 023), AA is MLRA subarea (eg. XY), NNN is number (eg 001) and SS is state (eg. OR). Note: "ZZ" was used for subarea to identify "filler" numbers assigned where the NRCS number was unknown. See the table RSITESUM for list.
basis	character	7	the basis for stand composition information SAMPLED the stand was sampled or determined to be the same as a sampled stand. SITCDAS the data is the average of a strata consisting of samples within the same range site, condition class, and existing vegetation association within the same inventory. PVTCDAS the data is the average of a strata consisting of the same ICBEMP potential vegetation type, condition

			class, and existing vegetation association. Spokane and Two Rivers inventories combined for this stratification.
			PVTCDSE the data is the average of a strata consisting of the same ICBEMP potential vegetation type, condition class, and vegetation series. Spokane and Two Rivers inventories combined for this stratification.
symbol	character	7	See NRCS 1971 *National List of Scientific Plant Names* (NLSPN) for conventions. See table NLSPNSCI.
composition	integer	3	Percent composition (based on annual production of above-ground vegetation, air dried)
plantclass	character	4	Plant source (1st character), life cycle (2nd character), and size/form (3rd & 4th characters) as follows: source: I = introduced, N = native life cycle: A = annual, P = perennial size/form: SF small forb; LF large forb; SG small grass; LG large grass; LS low shrub; MS mid shrub; TS tall shrub; T tree

Purpose: This table is used in conjunction with the SITEEDIT table to update OAESIS. The format of this table is identical to the format of the COMPOSIT table.

GEOSPATIAL METADATA
TEMPLATE/FORMAT FOR DATA ENTRY

1.0 IDENTIFICATION INFORMATION

1.1 Citation

Title (Theme Name): Oaesis (Polygon)
Resource Description (Theme Abbreviation):
Originator: OR/WA BLM
Publication Date: 199612

1.2 Description

Abstract: This theme portrays information related to Ecological Site Inventories for lands east of the Cascade Mountains.
Purpose: Land Use Planning, Project Planning
Supplemental Information: BLM (Bureau of Land Management)
SWA (Site Write-up Area)
OAESIS (Oregon's Automated Ecological Site Inventory System)
RDOC (Range Documentation)
ESI (Ecological Site Inventory)

1.3 Time Period Covered

Beginning Date: 1976
Ending Date: Present
Currentness Reference: Publication Date

1.4 Status

Progress: In Work
Maintenance and Update Frequency: Unknown

1.5 Spatial Domain

North Bounding Coordinate (Latitude): 49.00
South Bounding Coordinate (Latitude): 42.00
West Bounding Coordinate (Longitude): -121.50
East Bounding Coordinate (Longitude): -117.00

1.6 Keywords

Theme Keywords: SWA, ESI, Stand, Oaesis, Range, Soils
Theme Keyword Thesaurus: Not applicable
Place Keywords: Eastern Oregon, Oregon, Eastern Washington, Washington
Place Keyword Thesaurus: Not applicable

1.7 Access Restrictions: Discretionary, contains no sensitive information - generally considered releasable.

1.8 Use Restrictions: None

1.9 Point of Contact (Data Steward)

Contact Person:	Larry L. Walker
Contact Position:	Range Conservationist
Contact Organization:	Bureau of Land Management, Oregon State Office
Contact Address Type:	Mailing
Contact Address:	P.O. Box 2965
Contact City:	Portland
Contact State:	OR
Contact ZipCode:	97208
Contact Voice Telephone:	(503) 952-6048

1.10 Browse Graphic (Not Currently used by OR/WA BLM)

1.11 Data Set Credit (Not Currently used by OR/WA BLM)

1.12 Security Information (Not Currently used by OR/WA BLM)

1.13 Native Data Set Environment

Software:	ARC/INFO ver. 7.0.4
Computer Operating System:	AIX/UNIX ver. 3.2

1.14 Cross Reference (Not Currently used by OR/WA BLM)

2.0 DATA QUALITY INFORMATION

2.1 Attribute Accuracy

Attribute Accuracy Report: Attributes compared to source documents during capture. Leading character added to differentiate polygons by project for coverage-wide uniqueness.

2.2 Logical Consistency

Logical Consistency Report: Coverage built for polygon topology. All polygons have a Stand value or NULL for no data.

2.3 Completeness Report

Completeness Report: Only covers those lands inventoried in the following Oregon/Washington BLM Districts: Prineville, Vale, Burns, Spokane.

2.4 Positional Accuracy

Horizontal Positional Accuracy Report: Unknown

Vertical Positional Accuracy Report: Not Applicable

2.5 Lineage

Source Information (Repeat for each data source used)

Data Source Citation

Title:	SWA
Originator:	OR/WA BLM
Publication Date:	Unknown
Source Citation Abbreviation:	BLM SWA

Data Source Contribution: Polygons and Attributes
Data Source Scale: 24000
Type of Source Media: Resource maps and overlays
Source Time Period
Beginning Date: Unknown
Ending Date: Unknown
Currentness Reference: Publication Date

Title: RDOC
Originator: Burns OR BLM
Publication Date: Unknown
Source Citation Abbreviation: Unknown
Data Source Contribution: Polygons and Attributes
Data Source Scale: 24000
Type of Source Media: Resource maps and overlays
Source Time Period
Beginning Date: Unknown
Ending Date: Unknown
Currentness Reference: Publication Date

Processing Steps (Repeat for each distinct step)
Process Description: For SWAs, coverages appended to project-wide coverages. Data from projects merged with overlaps resolved by precedence determined by data steward. For RDOCs, SWA numbers assigned to polygons and merged with SWAs. Before merging projects, a unique leading character was assigned to each projects SWA numbers. This prevents duplicate SWA numbers in different areas.
Process Date: 1995-1996

2.6 Cloud Cover (Not currently used by OR/WA BLM)

3.0 Spatial Data Organization Information

3.1 Indirect Spatial Reference Method: None

3.2 Direct Spatial Reference Method: Vector

3.3 Point and Vector Object Information: (Not Currently Used by OR/WA BLM)

3.4 Raster Object Information: (Not Currently Used by OR/WA BLM)

4.0 SPATIAL REFERENCE

4.1 Horizontal Coordinate System Definition
(enter data for either Geographic or Grid Coordinate System)

Geographic
Latitude Resolution: Not Applicable
Longitude Resolution: Not Applicable
Geographic Coordinates Units: Not Applicable

Grid Coordinate System

Grid Coordinate System Name: Universal Transverse Mercator

Zone Identifier(s): 11

Map Projection

Map Projection Name: UTM

Map Projection Parameters

Standard Parallel (one or two occurrences): Not Applicable

Scale Factor at Central Meridian: Not Applicable

Longitude of Central Meridian: Not Applicable

Latitude of Projection Origin: Not Applicable

False Easting: Not Applicable

False Northing: Not Applicable

Planar Coordinate Information

Planar Coordinate Encoding Method: Coordinate Pairs

[ENTER DATA FOR EITHER COORD. REP. OR DISTANCE AND BEARING]

Coordinate Representation

Abscissa Resolution: .001

Ordinate Resolution: .001

Distance and Bearing Representation

Distance Resolution: Not Applicable

Bearing Resolution: Not Applicable

Bearing Units: Not Applicable

Bearing Reference Direction: Not Applicable

Bearing Reference Meridian: Not Applicable

Planar Distance Units: Not Applicable

Geodetic Model

Horizontal Datum Name: NAD27

Ellipsoid Name: Clarke 1866

Semi-major Axis: 6,378,206.4 meters

Denominator of Flattening Ratio: 294.98

4.2 Vertical Coordinate System Definition

Altitude System Definition

Altitude Datum Name: Not Applicable

Altitude Resolution: Not Applicable

Altitude Distance Units: Not Applicable

Altitude Encoding Method: Not Applicable

Depth System Definition

Depth Datum Name: Not Applicable

Depth Resolution: Not Applicable

Depth Distance Units: Not Applicable

Depth Encoding Method: Not Applicable

5.0 Entity and Attribute Information

(complete 5.1 and/or 5.2)

5.1 Detailed Description

Entity Type Information

Entity Type Label: Oaesis (polygon attribute table)

Entity Type Definition: Polygons with unique combinations of values as delineated by resource specialists.

Entity Type Definition Source: OR/WA BLM

Attribute Information (Repeat as needed)

Attribute Label: Stand

Attribute Definition: Address to database

Attribute Definition Source: OR/WA BLM

Attribute Domain: 2 characters followed by 3 digits. First Character as follows:
A - Brothers Inventory
B - Two Rivers Inventory
C - John Day Inventory
D - Southern Malheur Inv.
E - Spokane Inventory
F - Medford Inv. (reserved)
G - Three Rivers Inventory
H - Andrews Inventory
Remaining Character and Digits strictly to provide a unique label for a polygon.

Attribute Units of Measure: Not Applicable

5.2 Overview Description

Entity and Attribute Overview: This layer has one table holding the value used to link geographic areas to the values contained in the OAESIS database in Informix.

Entity and Attribute Detail Citation: OAESIS - A Rangeland Database by Larry L. Walker.

6.0 Distribution Information

6.1 Distributor

Contact Person: Lisa Blackburn

Contact Position: State Records Administrator

Contact Organization: Bureau of Land Management, OR/WA State Office

Contact Address Type:	Mailing Address
Contact Address:	P. O. Box 2965
Contact City:	Portland
Contact State:	OR
Contact ZipCode:	97208-2965
Contact Voice Telephone:	(503)952-6276

6.2 Resource Description (see section 1.1)

6.3 Distribution Liability

Distribution Liability (disclaimer): No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

6.4 Standard Order Process

Non-Digital Form: Not Applicable

Digital Transfer Information

Format Name:	ARCE
File Decompression Technique:	No compression applied

Offline Option

Media:	8 mm tape
Recording Density:	Low
Recording Density Units:	Not Applicable
Recording Format:	TAR
Compatibility Information:	Sun UNIX

Fees: Varies. Fees based on the following:

$8.00 administrative fee
$18.60 per hour research time (human time spent to locate the files and make the tape)
$0.13 per page copying costs (8.5 x 11 up to 8.5 x 14)
$7.50 per paper plot; $16.00 per mylar plot
Cost of media (diskettes, tapes, etc.)
Cost of postage (based on actual postage, including tubes, padded envelopes, overnight/express mail, etc.)

6.5 Custom Order Process: Call Contact Person (See Section 6.1)

6.6 Technical Prerequisites (Not Currently used by OR/WA BLM)

6.7 Available Time Period (Not Currently used by OR/WA BLM)

7.0 Metadata Reference Information

7.1 Metadata Date: 19961203

7.2 Metadata Review Date: None

7.3 Metadata Future Review Date: Unknown

7.4 Metadata Contact

Contact Person:	Stan Frazier
Contact Position:	State Data Administrator
Contact Organization:	Bureau of Land Management, OR/WA State Office
Contact Address Type:	Mailing Address
Contact Address:	P. O. Box 2965
Contact City:	Portland
Contact State:	OR
Contact ZipCode:	97208-2965
Contact Voice Telephone:	(503)952-6009

7.5 Metadata Standard Name: Federal Geographic Data Committee Content Standard for Digital Geospatial Metadata.

7.6 Metadata Standard Version: 19940608

7.7 Metadata Time Convention: (Not currently used by OR/WA BLM)

7.8 Metadata Access Constraints: (Not currently used by OR/WA BLM)

7.9 Metadata Use Constraints: (Not currently used by OR/WA BLM)

7.10 Metadata Security Information: (Not currently used by OR/WA BLM)

CRBSUM/VDDT - OAESIS Crosswalk Table

The linkage between the CRBSUM/VDDT models and OAESIS is not "clean" below the potential vegetation type (PVT) level. This is at least partially due to use of an "open legend" during development of the models. The information in this table shows the degree to which the rangeland data stored in OAESIS can be crosswalked to the models, and where additional work would be needed to develop a clean crosswalk.

PVT#	Abbrev.	Description (comments)					
	CT#	Community Type	ST#	Structure Type	woodyclass	herbclass	stands
none	**ACANA**	**Silver Sagebrush (Not an ICBEMP PVT)**					
		Inventoried but not in Model				NB	16
		Inventoried but not in Model				NO	3
		Inventoried but not in Model				XB	4
		Inventoried but not in Model			CS	NB	66
		Inventoried but not in Model			CS	NO	161
		Inventoried but not in Model			CS	XB	3
		Inventoried but not in Model			CS	XO	3
		Inventoried but not in Model			OS	NB	16
		Inventoried but not in Model			OS	NO	35
		Inventoried but not in Model			OS	XB	3
53	**DRDFB**	**Dry Douglas Fir with Ponderosa Pine (Non-commercial phase transitional to rangeland)**					
	1004	Grass/Forb	22	Closed Herbland		NB	2
	2018	Ponderosa Pine	1	Stand Initiation	OW	NO	1
	2018	Ponderosa Pine	3	Stem Exclusion Closed	CW	NB,NO	2
	2018	Ponderosa Pine	4	Understory Reinitiation	CW	NB,NO	dupe
	2018	Ponderosa Pine	5	Young Forest	CW	NB,NO	dupe
	2018	Ponderosa Pine	6	Old Multi Strata	CW	NB,NO	dupe
	2018	Ponderosa Pine	7	Old Single Strata	CW	NB,NO	dupe
	1005	Shrub Regeneration	26	Closed Mid Shrub	CS	NO	1
	2003	Douglas-fir	1	Stand Initiation	OW	NO	dupe
	2003	Douglas-fir	3	Stem Exclusion Closed	CW	NB,NO	dupe
	2003	Douglas-fir	4	Understory Reinitiation	CW	NB,NO	dupe
	2003	Douglas-fir	5	Young Forest	CW	NB,NO	dupe
	2003	Douglas-fir	6	Old Multi Strata	CW	NB,NO	dupe
	2003	Douglas-fir	7	Old Single Strata	CW	NB,NO	dupe
	1016	Mt. Shrub Ceanothus	26	Closed Mid Shrub	CW	NB,NO	dupe
	1010	Perennial Native Bunchgrass	21	Open Herbland		NB	dupe
		Inventoried but not in Model			OS	NB	1
		Inventoried but not in Model			OS	NO	3
63	**INTPP**	**Interior Ponderosa Pine (Non-commercial phase transitional to rangeland. Dominants about 65% pine, 19% Douglas fir, 16% Juniper)**					
	1009	Exotic	22	Closed Herbland		XB,XO	1
	1010	Perennial Native Burnchgrass	22	Closed Herbland		NB	2
	5009	Artemisia vasey, triden, Per. Grass	25	Open Mid Shrub	OS	NB,NO	83
	2018	Ponderosa Pine	1	Stand Initiation	OW	NB,NO	49
	2018	Ponderosa Pine	2	Stem Exclusion Open	OW	NB,NO	dupe
	2018	Ponderosa Pine	4	Understory Reinitiation	CW	NB,NO	187
	2018	Ponderosa Pine	5	Young Forest	CW	NB,NO	dupe
	2018	Ponderosa Pine	6	Old Multi Strata	CW	NB,NO	dupe
	2018	Ponderosa Pine	7	Old Single Strata	CW	NB,NO	dupe
	1005	Seral Shrub Regeneration	25	Open Mid Shrub	OS	NB,NO	dupe
		Inventoried but not in Model			CS	NB	86
		Inventoried but not in Model			CS	NO	43
		Inventoried but not in Model			OS	XB	1
74	**WOAK**	**White Oak Woodland**					
	5080	White Oak Shrub	11	Stand Initiation	OW	NO	83
	5080	White Oak Shrub	13	Understory Reinitiation	OW	NO	dupe

	5080	White Oak Shrub	14	Young Multi Story	CW	NO	1
	5080	White Oak Shrub	15	Old Multi Story	CW	NO	dupe
	5080	White Oak Shrub	16	Old Single Stratum	CW	NO	dupe
	5081	Mid Shrub	26	Closed Mid Shrub	CS	NO	10
	5082	White Oak, Exotic	11	Stand Initiation	OW	NO	dupe
	5082	White Oak, Exotic	13	Understory Reinitiation	OW	NO	dupe
	5082	White Oak, Exotic	14	Young Multi Story	CW	NO	dupe
	5082	White Oak, Exotic	15	Old Multi Story	CW	NO	dupe
	5082	White Oak, Exotic	16	Old Single Stratum	CW	NO	dupe
	5001	Bromus tectorum	21	Open Herbland		XO	none
		Inventoried but not in Model				NO	17
		Inventoried but not in Model			OS	NB	5
		Inventoried but not in Model			OS	NO	5
101	**AGST**	**Agropyron Steppe**					
	3001	Agropyron spicatum	22	Closed Herbland		NB	8
	4003	Exotic Forbs	22	Closed Herbland		XO	13
	4019	Poineer Forbs	21	Open Herbland		NO	10
	4021	Native Forbs	21	Open Herbland		NO	dupe
	4022	Exotic Perennial Grass	22	Closed Herbland		XB	none
	4047	Exotic Grass (BRTE/ELCA/POSE)	21	Open Herbland		XO	13
	4048	Seeded Native Grass (POSE/AGSP)	22	Closed Herbland		NB	dupe
	5061	Aristida longiseta	22	Closed Herbland		NO	dupe
		Inventoried but not in Model			CS	NB	7
		Inventoried but not in Model			CS	NO	44
		Inventoried but not in Model			CS	XO	6
		Inventoried but not in Model			CW	NB	6
		Inventoried but not in Model			CW	NO	4
		Inventoried but not in Model			OS	NB	19
		Inventoried but not in Model			OS	NO	29
		Inventoried but not in Model			OS	XO	8
		Inventoried but not in Model			OW	NB	5
		Inventoried but not in Model			OW	NO	3
102	**PUTR**	**Antelope Bitterbrush (Structures should be mid shrub, not low)**					
	3003	Purshia/Agropyron spicatum	23	Closed Low Shrub	CS	NB	767
	4049	Fire Maintained Grass (POSE/AGSP)	21	Open Herbland		NO	32
	4049	Fire Maintained Grass (POSE/AGSP)	22	Closed Herbland		NB	68
	5001	Bromus tectorum	21	Open Herbland		XO	13
	5055	Agropyron cristatum/Bromus tectorum	22	Closed Herbland		XB	9
	5063	Purshia tridentata/Bromus tectorum	23	Closed Low Shrub	CS	XB	16
		Inventoried but not in Model			CS	NO	426
		Inventoried but not in Model			CS	XO	35
		Inventoried but not in Model			CW	NB	156
		Inventoried but not in Model			CW	NO	75
		Inventoried but not in Model			CW	XO	24
		Inventoried but not in Model			OS	NB	585
		Inventoried but not in Model			OS	NO	253
		Inventoried but not in Model			OS	XB	7
		Inventoried but not in Model			OS	XO	31
		Inventoried but not in Model			OW	NB	204
		Inventoried but not in Model			OW	NO	30
		Inventoried but not in Model			OW	XO	2
103	**BSBW**	**Big Sage Steppe (Big Sagebrush/Basin Wildrye original description. Word "steppe" somewhat misleading for mostly bottomlands. Structures should be mid shrub, not low.)**					
	3021	Artemisia tri tri/Elymus cinereus	23	Closed Low Shrub	CS	NB	53
	3048	Exotic Annual Grass	21	Open Herbland		XO	2
	4040	Sitanion hystrix	21	Open Herbland		NO	3
	5050	Elymus cinereus	22	Closed Herbland		NB	3
	5052	Artemisia tri tri/Bromus tectorum	23	Closed Low Shrub	CS	X0	72
		Inventoried but not in Model				XB	14
		Inventoried but not in Model			CS	NO	106
		Inventoried but not in Model			CS	XB	2

		Inventoried but not in Model			CW	X0	1
		Inventoried but not in Model			OS	NB	45
		Inventoried but not in Model			OS	NO	29
		Inventoried but not in Model			OS	XB	39
		Inventoried but not in Model			OS	XO	8
104	**LSME**	**Low Sage-Mesic**					
	4013	Seeded Native Grass (AGSP/FEID)	21	Open Herbland		NB	2
	4022	Exotic Perennial Grass	21	Open Herbland		XB	none
	4027	Artemisia arbuscula/Native Forbs	23	Closed Low Shrub	CS	NO	72
	4027	Artemisia arbuscula/Native Forbs	24	Open Low Shrub	OS	NO	57
	4031	Artemisia arbusc./Native Bunchgrass	23	Closed Low Shrub	CS	NB	40
	4031	Artemisia arbusc./Native Bunchgrass	24	Open Low Shrub	OS	NB	55
	5001	Bromus tectorum	22	Closed Herbland		XO	none
	5012	Native Perennial Grass	22	Closed Herbland		NB	dupe
	5062	Artemisia arbuscula/Bromus tectorum	23	Closed Low Shrub	CS	XO	1
	5062	Artemisia arbuscula/Bromus tectorum	24	Open Low Shrub	OS	XO	none
	5064	Poa secunda/Perennial Forbs	21	Open Herbland		NO	1
		Inventoried but not in Model			CW	NB	2
		Inventoried but not in Model			CW	NO	5
105	**LSMJ**	**Low Sage-Mesic With Juniper**					
	2025	Juniper Woodlands	13	Understory Reinit. Wdlnd.	OW	NB, NO	15
	4013	Seeded Native Grass (AGSP/FEID)	21	Open Herbland		NB	10
	4022	Exotic Perennial Grass	21	Open Herbland		XB	2
	4025	Juniper Forest/Exotic Herb	15	Old Multi-strata Woodland	CW	XO	none
	4027	Artemisia arbuscula/Native Forbs	23	Closed Low Shrub	CS	NO	447
	4027	Artemisia arbuscula/Native Forbs	24	Open Low Shrub	OS	NO	374
	4031	Artemisia arbusc./Native Bunchgrass	23	Closed Low Shrub	CS	NB	233
	4031	Artemisia arbusc./Native Bunchgrass	24	Open Low Shrub	OS	NB	309
	5001	Bromus tectorum	22	Closed Herbland		XO	none
	5012	Native Perennial Grass	22	Closed Herbland		NB	dupe
	5062	Artemisia arbuscula/Bromus tectorum	23	Closed Low Shrub	CS	XO	2
	5062	Artemisia arbuscula/Bromus tectorum	24	Open Low Shrub	OS	XO	1
	5064	Poa secunda/Perennial Forbs	21	Open Herbland		NO	17
	5070	Juniper/ARTARB/FESIDA/Forb	11	Stand Initiation Woodland	OW	NB, NO	dupe
	5070	Juniper/ARTARB/FESIDA/Forb	13	Understory Reinit. Wdlnd.	OW	NB, NO	dupe
	5070	Juniper/ARTARB/FESIDA/Forb	16	Old Single-strata Woodland	CW	NB, NO	47
		Inventoried but not in Model			OS	XB	12
106	**LSXE**	**Low Sage-Xeric (SRM 407 is Stiff Sagebrush. References to Artemisia arbuscula should be to Artemisia rigida.)**					
	4027	Artemisia arbuscula/Native Forbs	23	Closed Low Shrub	CS	NO	76
	4027	Artemisia arbuscula/Native Forbs	24	Open Low Shrub	OS	NO	520
	4022	Poa secunda	21	Open Herbland		NO	48
	5001	Bromus tectorum	21	Open Herbland		XO	18
	5062	Artemisia arbuscula/Bromus tectorum	23	Closed Low Shrub	CS	X0	none
	5062	Artemisia arbuscula/Bromus tectorum	24	Open Low Shrub	OS	XO	12
		Inventoried but not in Model				NB	81
		Inventoried but not in Model			CS	NB	3
		Inventoried but not in Model			CW	NB	4
		Inventoried but not in Model			CW	NO	14
		Inventoried but not in Model			OS	NB	205
		Inventoried but not in Model			OW	NB	3
		Inventoried but not in Model			OW	NO	5
107	**LSXJ**	**Low Sage-Zeric With Juniper (SRM 407 is Stiff Sagebrush. References to Artemisia arbuscula should be to Artemisia rigida.)**					
	2025	Juniper Woodlands	11	Stand Initiation Woodland	OW	NO, NB	none
	4025	Juniper Forest/Exotic Herb	15	Old Multi-strata Woodland	CW	XO	none
	4027	Artemisia arbuscula/Native Forbs	23	Closed Low Shrub	CS	NO	73
	4027	Artemisia arbuscula/Native Forbs	24	Open Low Shrub	OS	NO	18
	4028	Juniper/Lowsage/Shortgrass	14	Yng. Multi-strata Woodland	OW	NO	none
	4028	Juniper/Lowsage/Shortgrass	15	Old Multi-strata Woodland	CW	NO	none

	4029	Juniper/Poa secunda	15	Old Multi-strata Woodland	CW	NO	dupe
	4042	Poa secunda	21	Open Herbland		NO	none
	5001	Bromus tectorum	21	Open Herbland		XO	none
	5062	Artemisia arbuscula/Bromus tectorum	23	Closed Low Shrub	CS	XO	none
	5062	Artemisia arbuscula/Bromus tectorum	24	Open Low Shrub	OS	XO	none
		Inventoried but not in Model			CS	NB	4
		Inventoried but not in Model			OS	NB	1
108	**WBSW**	**Big Sage-Warm (Dominant sage is about 80% Wyoming and about 20% Basin. Structures should be mid shrub, not low.)**					
	3013	Artemisia tri tri	24	Open Low Shrub	OS	NB	224
	4013	Seeded Native Grass (AGSP/FEID)	22	Closed Herbland		NB	dupe
	4022	Exotic Perennial Grass	22	Closed Herbland		XB	9
	4097	Agropyron/Poa secunda	22	Closed Herbland		NB	340
	4098	Poa secunda/Festuca octaflora	22	Closed Herbland		NO	94
	4099	Artemisia/Poa secunda	24	Open Low Shrub	OS	NO	477
	5001	Bromus tectorum	21	Open Herbland		XO	99
	5002	Artemisia/Bromus tectorum	24	Open Low Shrub	OS	XO	58
		Inventoried but not in Model			CS	NB	31
		Inventoried but not in Model			CS	NO	39
		Inventoried but not in Model			CS	XO	11
109	**WBSC**	**Big Sage-Cool (Dominant sage is about 50% Wyoming and about 50% Basin. This PVT is about one-third of BLM land in ICBEMP. If going to call something "Big Sage Steppe", fits here best - not at BSBW Structures should be mid shrub, not low.)**					
	3013	Artemisia tri tri	24	Open Low Shrub	OS	NB	1808
	4013	Seeded Native Grass (AGSP/FEID)	22	Closed Herbland		NB	dupe
	4022	Exotic Perennial Grass	22	Closed Herbland		XB	146
	4097	Agropyron/Poa secunda	22	Closed Herbland		NB	635
	4098	Poa secunda/Festuca octaflora	22	Closed Herbland		NO	213
	4099	Artemisia/Poa secunda	24	Open Low Shrub	OS	NO	751
	5001	Bromus tectorum	21	Open Herbland		XO	58
	5002	Artemisia/Bromus tectorum	24	Open Low Shrub	OS	XO	204
		Inventoried but not in Model			CS	NB	697
		Inventoried but not in Model			CS	NO	1189
		Inventoried but not in Model			CS	XB	31
		Inventoried but not in Model			CS	XO	265
		Inventoried but not in Model			CW	NB	170
		Inventoried but not in Model			CW	NO	49
		Inventoried but not in Model			CW	XO	22
		Inventoried but not in Model			OS	XB	278
		Inventoried but not in Model			OW	NB	84
		Inventoried but not in Model			OW	NO	28
		Inventoried but not in Model			OW	XB	1
		Inventoried but not in Model			OW	XO	3
110	**CTRV**	**Cottonwood Riverine (Few samples due to inventory scale.)**					
	2018	Interior Ponderosa Pine	7	Old Single-strata Forest			none
	4057	Poa Pratensis	22	Closed Herbland		XB	none
	4079	Gravel Bar	25	Open Mid Shrub	OS	all	9
	4080	Populus/Cornus	1	Stand Initiation Forest			none
	4081	Populus trichocarpa	3	Stem Excl. Clsd Canopy Frst.			none
	4081	Populus trichocarpa	4	Understory Reinit. Forest			none
	4081	Populus trichocarpa	5	Younng Multi-strata Forest			none
	4081	Populus trichocarpa	6	Old Multi-strata Forest			none
	4084	Populus/Poa prantensis	1	Stand Initiation Forest			none
	4084	Populus/Poa prantensis	3	Stem Excl. Clsd Canopy Frst.			none
	4084	Populus/Poa prantensis	4	Understory Reinit. Forest			none
	4084	Populus/Poa prantensis	5	Younng Multi-strata Forest			none
	4084	Populus/Poa prantensis	6	Old Multi-strata Forest			none
	4087	Cornus/Crategus	26	Closed Mid Shrub	CS	all	23
	5076	Pinus/Populus/Shrub	4	Understory Reinit. Forest			none
	5076	Pinus/Populus/Shrub	6	Old Multi-strata Forest			none
	5077	PSEMEN/ABIGRA/Populus/Shrub	5	Younng Multi-strata Forest			none

	5077	PSEMEN/ABIGRA/Populus/Shrub	6	Old Multi-strata Forest			none
	5078	Pinus/Populus/Exotic	4	Understory Reinit. Forest			none
	5078	Pinus/Populus/Exotic	6	Old Multi-strata Forest			none
	5078	Pinus/Populus/Exotic	7	Old Single-strata Forest			none
	5079	PSEMEN/ABIGRA/Exotic	5	Younng Multi-strata Forest			none
	5079	PSEMEN/ABIGRA/Exotic	6	Old Multi-strata Forest			none
		Inventoried but not in Model				NO	3
111	**FESC**	**Fescue Grassland**					
	3010	Idaho Fescue/Wheatgrass	22	Closed Herbland		NB	43
	4013	Seeded Native Grass (AGSP/FEID)	22	Closed Herbland		NB	dupe
	4015	Low Prod Perennial Grass	21	Open Herbland		NO	33
	4020	Small Perennial Grass	22	Closed Herbland		NO	dupe
	4021	Native Forbs	22	Closed Herbland		NO	dupe
	4024	Exotic Herbaceous	21	Open Herbland		XO	10
	4057	Poa pratensis	21	Open Herbland		XB	1
	5046	Dryland Crop	22	Closed Herbland			
		Inventoried but not in Model			CS	NB	5
		Inventoried but not in Model			CS	NO	27
		Inventoried but not in Model			CS	XO	6
		Inventoried but not in Model			CW	NB	6
		Inventoried but not in Model			OS	NB	154
		Inventoried but not in Model			OS	NO	126
		Inventoried but not in Model			OS	XO	14
		Inventoried but not in Model			OW	NO	1
112	**BSML**	**Mountain Big Sage-Mesic-East (Does not occur in inventory area.)**					
113	**BSMC**	**Mountain Big Sage-Mesic-East w/Conifer (Does not occur in inventory area.)**					
114	**BSMW**	**Mountain Big Sage -Mesic-West (The M in BSMW originally represented mountain instead of mesic)**					
	4013	Seeded Native Grass (AGSP/FEID)	21	Open Herbland		NB	dupe
	4022	Exotic Perennial Grass	21	Open Herbland		XB	none
	5001	Bromus tectorum	22	Closed Herbland		XO	none
	5002	Artemisia/Bromus tectorum	25	Open Mid Shrub	OS	XO	4
	5002	Artemisia/Bromus tectorum	26	Closed Mid Shrub	CS	XO	3
	5013	Artemisia vasy,triden/Perennial Herbs	25	Open Mid Shrub	OS	NO	49
	5013	Artemisia vasy,triden/Perennial Herbs	26	Closed Mid Shrub	CS	NO	80
	5014	Perennial Native Herbaceous	22	Closed Herbland		NB	10
	5016	Artemisia vasy, triden/Perennial Grass	25	Open Mid Shrub	OS	NB	117
	5016	Artemisia vasy, triden/Perennial Grass	26	Closed Mid Shrub	CS	NB	88
	5064	Poa secunda/Perennial Forbs	21	Open Herbland		NO	2
		Inventoried but not in Model			CS	XB	2
		Inventoried but not in Model			CW	NO	1
		Inventoried but not in Model			OS	XB	3
115	**BSMJ**	**Mountain Big Sage Mesic West w/Juniper (The M in BSMW originally represented mountain instead of mesic)**					
	2025	Juniper Woodlands	14	Yng. Multi-strata Woodland	OW	NB	dupe
	3004	Juniper/Sagebrush/Wheatgrass	11	Stand Initiation Woodland	OW	NB	15
	3004	Juniper/Sagebrush/Wheatgrass	13	Understory Reinit. Woodlnd	OW	NB	dupe
	3004	Juniper/Sagebrush/Wheatgrass	16	Old Single-strata Woodland	CW	NB	9
	4013	Seeded Native Grass (AGSP/FEID)	21	Open Herbland		NB	dupe
	4022	Exotic Perennial Grass	21	Open Herbland		XB	none
	4025	Juniper Forest/Exotic Herb	15	Old Multi-strata Woodland	CW	XO	none
	5001	Bromus Tectorum	22	Closed Herbland		XO	none
	5002	Artemisia/Bromus tectorum	25	Open Mid Shrub	OS	XO	5
	5002	Artemisia/Bromus tectorum	26	Closed Mid Shrub	CS	XO	2
	5013	Artemisia vasy,triden/Perennial Herbs	25	Open Mid Shrub	OS	NO	96
	5013	Artemisia vasy,triden/Perennial Herbs	26	Closed Mid Shrub	CS	NO	227
	5014	Perennial Native Herbaceous	22	Closed Herbland		NB	8
	5016	Artemisia vasy, triden/Perennial Grass	25	Open Mid Shrub	OS	NB	288
	5016	Artemisia vasy, triden/Perennial Grass	26	Closed Mid Shrub	CS	NB	352
	5064	Poa secunda/Perennial Forbs	21	Open Herbland		NO	8

		Inventoried but not in Model			CW	NO	14
		Inventoried but not in Model			OS	XB	1
		Inventoried but not in Model			OW	NO	17
117	**SDSH**	**Salt Desert Shrub**					
	3015	Salt Desert Shrub	23	Closed Low Shrub	CS	NB,NO	150
	3015	Salt Desert Shrub	24	Open Low Shrub	OS	NB,NO	35
	4038	Exotic Annual Grass	22	Closed Herbland		X0	2
	4040	Sitanion hystrix	21	Open Herbland		NO	none
	5006	Seeded Exotic Agropyron	21	Open Herbland		XB	none
	5006	Seeded Exotic Agropyron	22	Closed Herbland		XB	none
		Inventoried but not in Model			CS	XB	2
		Inventoried but not in Model			CS	XO	109
		Inventoried but not in Model			OS	XB	2
		Inventoried but not in Model			OS	XO	18
118	**TTSA**	**Three Tip Sage**					
	3022	Three Tip Sagebrush	23	Closed Low Shrub	CS	NB,NO	12
	4024	Exotic Herbaceous	21	Open Herbland		XO	none
	5053	Agropyron cristatum	21	Open Herbland		XB	none
	5056	Perennial Herbs	21	Open Herbland		NO	none
	5059	Artemisia triparteta/Exotic	23	Closed Low Shrub	CS	XO	none
	5059	Artemisia triparteta/Exotic	24	Open Low Shrub	OS	XO	none
	5060	Artemisia triparteta/Agro. cristatum	23	Closed Low Shrub	CS	XB	none
	5060	Artemisia triparteta/Agro. cristatum	24	Open Low Shrub	OS	XB	none
		Inventoried but not in Model			OS	NB	26
		Inventoried but not in Model			OS	NO	1
119	**SALIX**	**Salix/Carex (Inventory not meaningful due to scale.)**					
120	**ASPEN**	**Aspen**					
	1015	General Shrub	26	Closed Mid Shrub	CS	NB,NO	12
	2008	Aspen	1	Stand Initiation Forest	OW	NB,NO	10
	2008	Aspen	3	Stem Excl. Clsd. Canopy	CW	NB,NO	39
	2008	Aspen	4	Understory Reinit. Forest	CW	NB,NO	dupe
	2008	Aspen	5	Young Multi-strata Forest	CW	NB,NO	dupe
	4057	Poa pratensis	22	Closed Herbland		XB	none
	5014	Perennial Native Herbaceous	22	Closed Herbland		NO	none
121	**CEW1**	**Mountain Mahogany (without sagebrush) Few samples due to inventory scale. Shrub structures should all be mid shrub.)**					
	3007	Mountain Mahogany	23	Closed Low Shrub	CS	NB,NO	4
	3007	Mountain Mahogany	25	Open Mid Shrub	OS	NB,NO	none
	4049	Fire Maintained Grass (POSE/AGSP)	21	Open Herbland		NB	none
	5014	Perennial Native Herbaceous	21	Open Herbland		NO	none
		Inventoried but not in Model			CW	NO	6
122	**CEW2**	**Mountain Mahogany with ArtRva (Shrub structures should all be mid shrub.)**					
	3007	Mountain Mahogany	23	Closed Low Shrub	CS	NB,NO	22
	3007	Mountain Mahogany	25	Open Mid Shrub	OS	NB,NO	19
	4049	Fire Maintained Grass (POSE/AGSP)	21	Open Herbland		NB	none
	5009	Artemisia vasey/Perennial Grass	23	Closed Low Shrub	CS	NB,NO	dupe
	5014	Perennial Native Herbaceous	21	Open Herbland		NO	none
123	**MTSH**	**Mountain Shrub (No samples due to inventory scale.)**					
124	**RIGR**	**Riparian Graminoid**					
	4021	Native Forbs	22	Closed Herbland		NO	42
	4094	Deschampsia **Caespitosa ??**	22	Closed Herbland		NB	7
	4095	Exotic Riparian Herbs	22	Closed Herbland		XO	none
	4096	Exotic Moist Herbs	22	Closed Herbland		XO	none
		Inventoried but not in Model				XB	1
		Inventoried but not in Model			OS	NB	1

125 SARP Saltbrush Riparian (Saline Riparian original description. Shrub structures should all be mid shrub.)

5066	Sarcobatus vermiculatus	24	Open Low Shrub	OS	NB	4
5067	Ryegrass	22	Closed Herbland		NB	3
5068	Greasewood, saltgrass	25	Open Mid Shrub	OS	NO	7
5069	Greasewood	25	Open Mid Shrub	OS	NB?NO?	dupe
	Inventoried but not in Model				NO	16
	Inventoried but not in Model			CS	NB	24
	Inventoried but not in Model			CS	NO	75
	Inventoried but not in Model			CS	XO	19
	Inventoried but not in Model			OS	XB	5

126 RPSED Riparian Sedge (None sampled due to elevation. (Forest Service type))

127 MRLS Mountain Riparian Low Shrub (None sampled due to elevation. (Forest Service type))

129 CFESC Fescue Grassland with Conifer (None sampled due to elevation. (Forest Service type))

130 JUOC Juniper (Outcrops not sampled due to inventory scale. See BSMJ, LSMJ, LSXJ, etc. for expansions.)

131 ALSHR Alpine Shrub-Herbaceous (None sampled due to elevation. (Forest Service type))